# PURCHASING

The Methods Magazine for Industrial Buyers





Special Report: N.A.P.A. Convention







Atlantic City, N.J. May 27, 28, 29

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A PIPE FITTING MANUFACTURER'S REPORT:

# Texaco's tri-purpose oil upped output 30%—cut unit costs

Changing to Texaco Cleartex Oil, the tri-purpose oil, proved to this manufacturer (name on request) that using the proper lubricant in one operation can increase production and cut costs all along the line.

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economies and production increases. A Texaco Lubrication Engineer will gladly help you make the proper

too, where the use of the proper selection, Call the nearest of more lubricant can produce operating than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.



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### **B.F.Goodrich report:**



### Men punch holes in rock to blow up a cliff

#### B. F. Goodrich improvements in rubber brought extra savings

Problem: Those workmen are drilling holes for dynamite charges, to blast out rock for a dam. It's no cinch to lug a heavy drill down a cliff like that. Too many times it had to be promptly carried up again—the tool had choked to death.

When heat from the compressor got into the hose, it would harden the rubber, breaking it into loose, gummy particles that clogged the air tool, put it out of action.

What was done: B.F.Goodrich engineers went to work on the problem. By adding, subtracting, changing proportions of rubber, they found a special

compound that stands hot air, won't harden, crack, or break into gummy particles to clog tools.

Savings: Hose lined with this new rubber was made and put to work. On jobs where air hose used to go to pieces in weeks, B.F.Goodrich hose lasts months, even years. The nuisance of clogged tools was ended permanently.

Extra benefits: Resistance to heat is only one of the improvements made in this B.F.Goodrich air hose. It has a cover so rugged that dragging over rough rock won't tear it. And it's light, flexible, easy to work with.

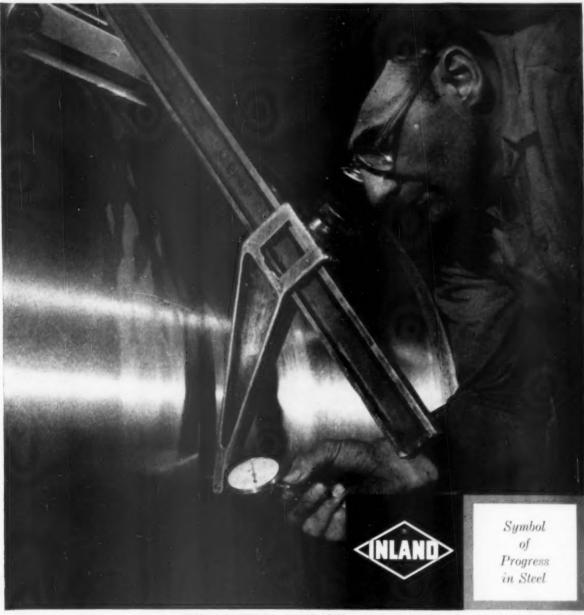
Where to buy: Your B.F.Goodrich distributor has exact specifications for the B.F.Goodrich air hose described here. And, as a factory-trained specialist in rubber products, he can answer your questions about all the rubber products B.F.Goodrich makes for industry. B.F.Goodrich Industrial Products Co., Dept. M-105, Akron 18, Ohio.



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We have compiled a brand new 56-page catalog which contains descriptions and data on the equipment needed for an industrial television system. We will be more than glad to send to any firm located in the U.S. a copy of this catalog. No cost or obligation, of course,—simply write us on your company letterhead.

\*through qualified service organizations

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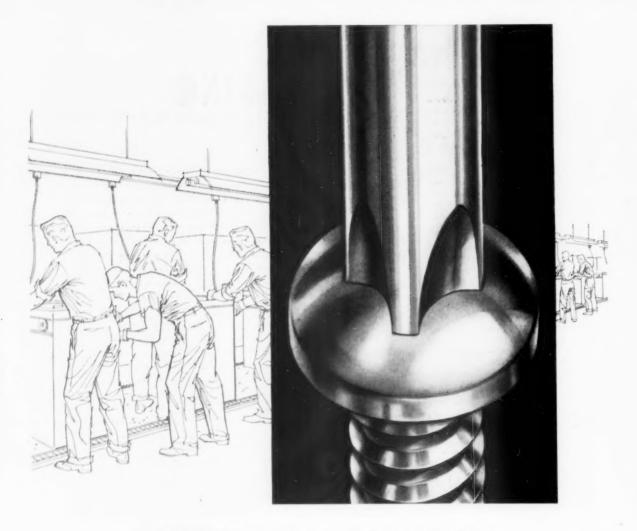
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# IF THE TRUTH MUST BE TOLD

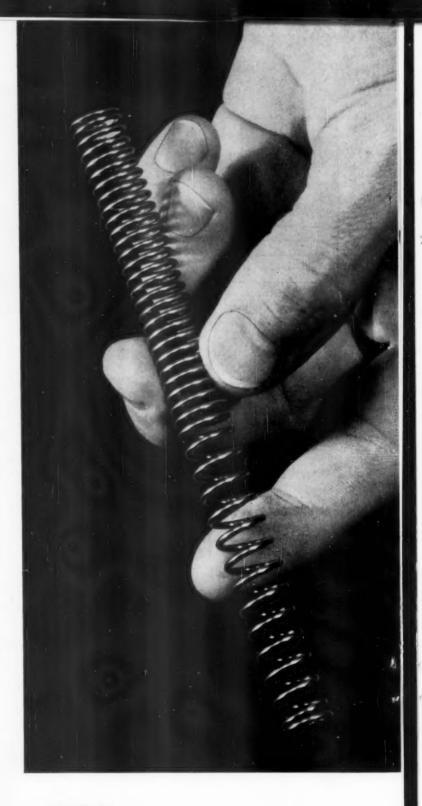
... by a spring

This spring, the dependable heart of a leading make of air pressure gauge, must "tell the truth" years on end. But at first there were tough problems . . . and eventually the manufacturer turned to the Worcester Wire Works Division of National-Standard for a special spring wire that would solve them . . .

Look how the spring has a double pitch to properly take and indicate a wide range of pressure loads. Obviously, extreme accuracy, exceptional uniformity, and exact behavior are absolute musts. Rejects were running up to 50 per cent!

That is, until Worcester Wire Works studied the requirements, did developmental work, came up with a specially prepared spring wire and so solved the problems!

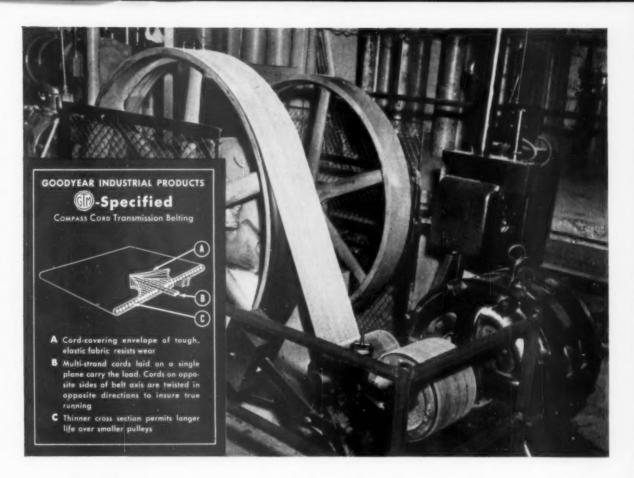
Like the other National-Standard divisions, Worcester Wire Works features unusual service that helps other manufacturers turn out better products at lower cost. Try us. You'll see.



NATIONAL



STANDARD



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-thanks to his Goodyear Distributor and the G.T.M.

Belting this oxygen compressor caused no end of problems for a Midwest welding supply house. The belts slipped. They stretched. They had to be taken up frequently. And even relatively expensive ones lasted only 3 years.

Then he called in his Goodyear Distributor. The recommendation: a Compass 40 Transmission Belt — constructed with exclusive Goodyear 3-T cords for greater strength and less stretch than any other belt. The result? Though it cost less than previous belts, the Compass 40 served for 16 years — was only taken up once during its entire lifetime.

And that's typical of the moneysaving results

when a Goodyear Distributor tackles a job. For he's trained to handle tough problems. And should special technical knowledge be needed, he can call in the G.T.M.—Goodyear Technical Man. What's more, they'll select from the unmatched Goodyear line of industrial rubber products—made to the world's highest standards of quality.

The Yellow Pages of your Phone Book contain the name and address of your Goodyear Distributor. Just look under "Rubber Products" or "Rubber Goods." Then call him – or write: Goodyear, Industrial Products Division,

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JULY, 1957

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dustries . . . paper-making, ship-building, metalworking, atomic energy, petro-chemical, and others ... with centrifugally cast cylinders and tubular parts, many of which can't be made by any other process to the exacting standards required.

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- inclusions and porosity
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- JOB-READY CASTINGS—machined to your exact specifications, eliminate extra costs from rejects, down-time, loss of production

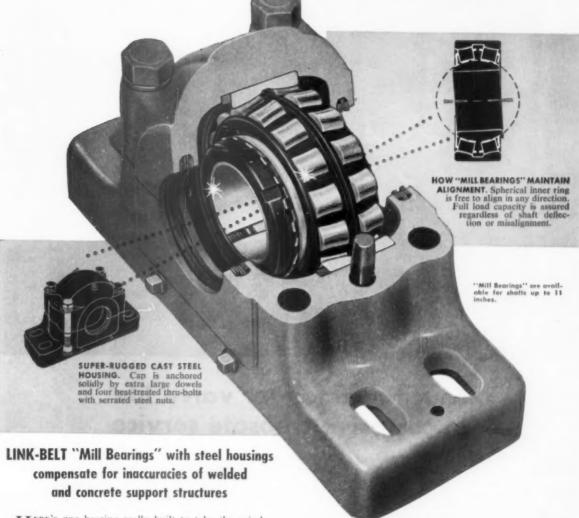
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How Crane valves cut costs at Long-Bell



# Four times longer valve life in corrosive creosate service

The scene is in the treating plant of the Long-Bell Division of the International Paper Company, at Longview, Washington. The valve in the line from hot well to creosoting retorts is a Crane Ni-Resist gate, installed in 1949.

However, back in 1947, another make valve of the same type was used here. But it was an early victim of corrosion from the creosote and light oil vapors present. It began to leak in less than a year, and had to be replaced with this Crane valve after 18 months.

In contrast, the Crane Ni-Resist valve resisted leakage for 6 years, until its disc was

corroded in 1955. Even then, only the disc was replaced, and the original valve is still in service.

Combined with Crane design and work-manship, Ni-Resist alloy cast iron with 18-8 S Mo trim provides the most economical valves for many process industries. They have substantially greater resistance to corrosion, erosion and wear than ordinary cast iron valves, yet cost very little more.

Look into these valves with your Crane Representative, or write to Crane Co. for Circular AD-2047.



# CRANE VALVES & FITTINGS

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by A. N. Wecksler

July 1, 1957

#### ANOTHER ROUND OF OPTIMISM

Government spending increasing—military costs on the upgrade—overall levels of production remaining high...

This pattern has already been confirmed for the balance of

the current year, over earlier forecasts that drops should be expected.

Behind this continued high level are several important factors—the first is the assurance of continued high levels of consumer income—high mass employment at high level wages.

Second is the fact that costs and prices are rising-this maintains the incentive to buy.

Third is the feeling that the pace can be sustained . . . that we have yet to feel the full-scale impact of an expanded road program—that a large school building program is in the cards—that plant expansions are due to continue—that the military demand is not likely to fall apart.

#### MILITARY WILL **BUY HARDWARE**

In the military, what is happening is a drastic shift in the labor-capital mix. The military has been using a large wedge of manpower-reflective of what is likely to become an archaic military concept.

Objective now is to scale down the number of men-to compen-

sate by increasing the firepower of equipment.

This means more money for equipment—less for payroll, and this trend is not likely to be upset by the disarmament talk that is floating around.

#### BARTER FOR **METALS STALLS**

Government buying as a means of supporting metal markets has run into major problems. Just as in the case of farm products, where the government purchase programs tend to insulate the farmer against changes in market requirements, the government metals purchases shield the non-ferrous metal market.

Also, as in the case of farm products, when the break in government support finally comes about, the impact on the coddled industry is much more severe than if it had been subject to normal market influence.

Government stockpiling of strategic materials has been a legacy of earlier war experiences. First impact of a war is materials scarcity. Problems of transport and supply are complicated by hoarding and price speculation. The transparent answer is stockpiling.

# How to shave 5,000 pounds off a destroyer escort

In designing these fast, hard-hitting Destroyer Escorts now in commission, the U. S. Navy specified standard aluminum structural beams for the superstructure to save weight above decks.

In supplying these aluminum beams, Bridgeport suggested an additional saving in weight could be made, without sacrificing strength or safety, by redesigning the standard sections. Working with the Navy and Puget Sound Bridge & Dredging Company, Seattle, Washington—one of the shipyards building the DE's—Bridgeport's light metal specialists were able to shave more than 5,000 pounds from each DE.

These DE's are another good example of how Bridgeport Aluminum Extrusions are saving weight, reducing material costs and making new concepts of design possible in a wide variety of applications.

If you're now using aluminum extrusions or have them in mind, it will pay you to call Bridge-port. Our specialists can custom-tailor an extrusion to give you an economical, practical design or help you select from a wide range of standard sections—many available without die charge.

Your Bridgeport Sales Office has the answer to your need. A phone call will give it to you.

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Questions now are (1) whether this concept of a strategic stockpile is supportable in the face of the range of effectiveness of modern weapons and, (2) how to taper off the government buying program after long years of buying support.

In the case of lead and zinc, the government worked out a barter program as a price support measure—bartering surplus food to foreign governments in exchange for foreign-produced lead and zinc. This in addition to modest purchases for the strategic stockpile, the barter arrangement tended to drain off surplus lead and zinc and bolster the price of U. S .- produced

#### **NON-FERROUS METALS** UNDER PRESSURE

From the government's point of view, the barter was the lesser of two evils: better to hold surplus metals than surplus foods—as metals are easier to store and do not spoil.

Question was how far these "shenanigans" could go without wholly corrupting the export-import trade. It became quickly apparent that the end of such tolerance had been reached, and the barter practices have been stalled.

What happens as the price of lead, zinc and copper falls? The normal reaction is to put an immediate squeeze on marginal mines-and already a number of mines have shut down. The lower price levels attract more buying-and at some point, supply meets demand.

Just such an adjustment is going on—another of the "rolling readjustments" that have become familiar over the last four years.

#### INVENTORIES GIVE TIPOFF TO BUSINESS THINKING

Just as the <u>business climate</u> has been <u>highly sensitive</u> to inventory accumulation trends, purchasing agents have watched the business climate as a tipoff on what their inventory policies should be.

This close attention to inventory during the early part of this year led most observers to overlook the trend in volume of finished purchases.

Buyers at all levels strained to bring their inventories down. First effort was to keep from accumulating even larger inventories. The net effect of these efforts was to reduce the levels of inventory.

In contrast, rate of <u>final purchases</u> went ahead <u>considerably</u>. Based on the rate of <u>final purchases</u>, there was a sizeable increase in gross national product during the first quarter of this year as compared to the same period last year.

This came as quite a surprise to most observers-who in closely watching inventory levels assumed that a general downturn in business was taking place.

Question now is whether the inventory adjustments were justified—and the general assumption is that they were largely in the nature of a balancing out of inventory. The steel bulge of last year-when first there was buying in anticipation of a strike, than an actual strike, and finally a rush of buyinghas been adjusted.

Now the picture ahead is a fairly stable one. Prices have been inching up, and the outlook is for a continued, moderate rise in prices. Labor is stable. All major industries have made their labor bargains - and no important strikes are likely.

This generally means that there is no basis for speculative

inventory buying.

Adjustments have already been made to the lower level of auto sales and of housing starts. Here the picture is for future improvement-rather than further decline.

Based on these conditions, inventory buying may pick up somewhat from the first quarter levels—but a sidewise movement is more likely.



# LEADED STEELS LATEST INFORMATION

New 16-page booklet presents latest information on basic characteristics, mechanical properties and workability of Aristoloy Leaded Steels. Test results are supported by complete data and charts. Also contains several pages of case histories based on manufacturers' experience and documented by time study records, showing actual savings in reduced machining time and increased tool life.

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| Circle items |    |     |     |      |     | or advertise |      |     | d in this |       | issue |     |      |     |     |     |     |     | JUI | Y. 1 | 957  |
| 1            | 26 | 51  | 76  | 101  | 126 | 151          | 176  | 201 | 226       | 251   | 1 276 | 301 | 326  | 351 | 376 | 401 | 426 | 451 | 476 | 501  | 526  |
| 2            | 27 | 52  | 77  | 102  | 127 | 152          | 177  | 202 | 227       | 252   | 277   | 302 | 327  | 352 | 377 | 402 | 427 | 452 | 477 | 502  | 527  |
| 3            | 28 | 53  | 78  | 103  | 128 | 153          | 178  | 203 | 228       | 253   | 278   | 303 | 328  | 353 | 378 | 403 | 428 | 453 | 478 | 503  | 528  |
| 4            | 29 | 54  | 79  | 104  | 129 | 154          | 179  | 204 | 229       | 254   | 279   | 304 | 329  | 354 | 379 | 404 | 429 | 454 | 479 | 504  | 529  |
| 5            | 30 | 55  | 80  | 105  | 130 | 155          | 180  | 205 | 230       | 255   | 280   | 305 | 330  | 355 | 380 | 405 | 430 | 455 | 480 | 505  | 530  |
| 6            | 31 | 56  | 81  | 106  | 131 | 156          | 181  | 206 | 231       | 256   | 281   | 306 | 331  | 356 | 381 | 406 | 431 | 456 | 481 | 506  | 531  |
| 7            | 32 | 57  | 82  | 107  | 132 | 157          | 182  | 207 | 232       | 257   | 282   | 307 | 332  | 357 | 382 | 407 | 432 | 457 | 482 | 507  | 532  |
|              | 33 | 58" | 83  | 108  | 133 | 158          | 183  | 208 | 233       | 258   | 283   | 308 | 333  | 358 | 383 | 408 | 433 | 458 | 483 | 508  | 533  |
| 9            | 34 | 59  | 84  | 109  | 134 | 159          | 184  | 209 | 234       | 259   | 284   | 309 | 334  | 359 | 384 | 409 | 434 | 459 | 484 | 509  | 534  |
| 10           | 35 | 60  | 85  | 110  | 135 | 160          | 185. | 210 | 235       | 260   | 285   | 310 | 335  | 360 | 385 | 410 | 435 | 460 | 485 | 510  | 535  |
| 11           | 35 | 61  | 86  | 111  | 136 | 161          | 186  | 211 | 236       | 261   | 286   | 311 | 336  | 361 | 386 | 411 | 436 | 461 | 486 | 511  | 536  |
| 12           | 37 | 62  | 87  | 112  | 137 | 162          | 187  | 212 | 237       | 262   | 287   | 312 | 337  | 362 | 387 | 412 | 437 | 462 | 487 | 512  | 537  |
| 13           | 38 | 63  | 88  | 113  | 138 | 163          | 188  | 213 | 238       | 263   | 288   | 313 | 338  | 363 | 388 | 413 | 438 | 463 | 488 | 513  | 538  |
| 14           | 39 | 64  | 89  | 114  | 139 | 164          | 189  | 214 | 239       | 264   | 289   | 314 | 339  | 364 | 389 | 414 | 439 | 464 | 489 | 514  | 539  |
| 15           | 40 | 65  | 90  | 115  | 140 | 165          | 190  | 215 | 240       | 265   | 290   | 315 | 340  | 365 | 390 | 415 | 440 | 465 | 490 | 515  | 540  |
| 16           | 41 | 66  | 91  | 116  | 141 | 166          | 191  | 216 | 241       | 266   | 291   | 316 | 341  | 366 | 391 | 416 | 441 | 466 | 491 | 516  | 541  |
| 12           | 42 | 67  | 92  | 117  | 142 | 167          | 192  | 217 | 242       | 267   | 292   | 317 | 342  | 367 | 392 | 417 | 442 | 467 | 492 | 517  | 542  |
| 18           | 43 | 68  | 93  | 118  | 143 | 168          | 193  | 218 | 243       | 268   | 293   | 318 | 343  | 368 | 393 | 418 | 443 | 468 | 493 | 518  | 543  |
| 19           | 44 | 69  | 94  | 119  | 144 | 169          | 194  | 219 | 244       | 269   | 294   | 319 | 344  | 369 | 394 | 419 | 444 | 469 | 494 | 519  | 544  |
| 20           | 45 | 70  | 95  | 120  | 145 | 170          | 195  | 220 | 245       | 270   | 295   | 320 | 345  | 370 | 395 | 420 | 445 | 470 | 495 | 520  | 545  |
| 21           | 46 | 71  | 96  | 121  | 146 | 171          | 196  | 221 | 246       | 271   | 296   | 321 | 346  | 371 | 396 | 421 | 446 | 471 | 496 | 521  | 546  |
| 22           | 47 |     | 97  | 122  | 147 | 172          | 197  | 222 | 247       | 272   | 297   | 322 | 347  | 372 | 397 | 422 | 447 | 472 | 497 | 522  | 547  |
| 23           | 48 |     | 98  | 123  | 148 | 173          | 198  | 223 | 248       | 273   | 298   | 323 | 348  | 373 | 398 | 423 | 448 | 473 | 498 | 523  | 548  |
| 24           | 49 | 74  | 99  | 124  | 149 | 174          | 199  | 224 | 249       | 274   | 299   | 324 | 349  | 374 | 399 | 424 | 449 | 474 | 499 | 524  | 549  |
| 25           | 50 | 74  | 100 | 125  | 150 | 175          | 200  | 224 | 250       | 275   | 300   | 324 | 3.50 | 374 | 400 | 425 | 450 | 475 | 500 | 454  | 0.50 |

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| Circle items |    |      | de  | oscri | bed  | or advertised in this issue |      |     |     |     |   |     |       |     |     |     |     | JULY, 1957<br>(Expires 9-15-57) |     |     |     |     |
| 1            | 26 | 51   | 76  | 101   | 126  | 151                         | 176  | 201 | 226 | 251 | 1 | 276 | 301   | 326 | 351 | 376 | 401 | 426                             | 451 | 476 | 501 | 526 |
| 2            | 27 | 52   | 77  | 102   | 127  | 152                         | 177  | 202 | 227 | 252 | 1 | 277 | 302   | 327 | 352 | 377 | 402 | 427                             | 452 | 477 | 502 | 527 |
| 3            | 28 | 53   | 78  | 103   | 128  | 153                         | 178  | 203 | 228 | 253 | 1 | 278 | 303   | 328 | 353 | 378 | 403 | 428                             | 453 | 478 | 503 | 528 |
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| 5            | 30 | 55   | 80  | 105   | 130  | 155                         | 180  | 205 | 230 | 255 | 1 | 280 | 305   | 330 | 355 | 380 | 405 | 430                             | 455 | 480 | 505 | 530 |
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| 8            | 33 | 58   | H3  | 108   | 133  | 158                         | 183  | 208 | 233 | 258 | 1 | 284 | 309   | 334 | 359 | 384 | 409 | 434                             | 459 | 484 | 509 | 533 |
| 30           | 35 | 90   | 85  | 110   | 135  | 160                         | 185. |     | 234 | 260 |   | 285 | 310   | 335 | 360 | 385 | 410 | 435                             | 450 | 485 | 510 | 535 |
| 11           | 35 | 61   | 86  | 111   | 136  | 161                         | 186  | 211 | 236 | 261 |   | 286 | 311   | 336 | 361 | 386 | 411 | 436                             | 461 | 486 | 511 | 536 |
| 12           | 37 | 62   | 87  | 112   | 137  | 162                         | 187  | 212 | 237 | 262 | 1 | 287 | 312   | 337 | 362 | 387 | 412 | 437                             | 462 | 487 | 512 | 537 |
| 13           | 38 | 63   | BB  | 113   | 138  | 163                         | 188  | 213 | 238 | 263 | 1 | 288 | 313   | 338 | 363 | 388 | 413 | 438                             | 463 | 488 | 513 | 538 |
| 1.6          | 39 | 64   | 89  | 114   | 139  | 164                         | 189  | 214 | 239 | 264 |   | 289 | 314   | 339 | 364 | 389 | 414 | 439                             | 464 | 489 | 514 | 539 |
| 15           | 40 | 65   | 90  | 115   | 140  | 165                         | 190  | 215 | 240 | 265 |   | 290 | 315   | 340 | 365 | 390 | 415 | 440                             | 465 | 490 | 515 | 540 |
| 16           | 41 | 66   | 91  | 116   | 141  | 166                         | 191  | 216 | 241 | 266 |   | 291 | 316   | 341 | 366 | 391 | 416 | 441                             | 466 | 491 | 516 | 541 |
| 17           | 42 | 67   | 92  | 117   | 142  | 167                         | 192  | 217 | 242 | 267 | 1 | 292 | 317   | 342 | 367 | 392 | 417 | 442                             | 467 | 492 | 517 | 542 |
| 18           | 43 | 68   | 93  | 118   | 143  | 168                         | 193  | 218 | 243 | 268 | 1 | 293 | 318   | 343 | 368 | 393 | 418 | 443                             | 458 | 493 | 518 | 543 |
| 19           | 44 | 69   | 94  | 119   | 144  | 169                         | 194  | 219 | 244 | 269 |   | 294 | 319   | 344 | 369 | 394 | 419 | 444                             | 469 | 494 | 519 | 544 |
| 20           | 45 | 70   | 95  | 120   | 145  | 170                         | 195  | 220 | 245 | 270 | 1 | 295 | 320   | 345 | 370 | 395 | 420 | 445                             | 470 | 495 | 520 | 545 |
| 21           | 46 | 71   | 96  | 121   | 146  | 171                         | 196  | 221 | 246 | 271 | 1 | 296 | 321   | 346 | 371 | 396 | 421 | 446                             | 471 | 496 | 521 | 546 |
| 22           | 47 | 72   | 97  | 122   | 147  | 172                         | 197  | 222 | 247 | 272 | 1 | 297 | 322   | 347 | 372 | 397 | 422 | 447                             | 472 | 497 | 522 | 547 |
| 23           | 48 | 73   | 98  | 123   | 148  | 173                         | 198  | 223 | 248 | 273 | - | 298 | 323   | 348 | 373 | 398 | 423 | 448                             | 473 | 498 | 523 | 548 |
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| 25           | 50 | 75   | 100 | 125   | 150  | 175                         | 200  | 225 | 250 | 275 |   | 300 | 325   | 350 | 375 | 400 | 425 | 450                             | 475 | 500 | 525 | 550 |

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READER SERVICE is a monthly feature of PURCMASING Magazine designed to help the reader get all the information needed with the minimum of time and effort.

# catalog files

#### information for your

#### **ASBESTOS TEXTILES**

A 16-page booklet, No. 76-327, contains information on how to select asbestos textiles for any use from blast furnace packing to fire curtains. Facts are supplied in non-technical form.

Union Ashestos & Rubber Co.

Circle No. 1 on Inquiry Cord-Page 17

#### BATTERIES (MOTIVE-POWER)

Photographs and illustrations of long-life motive power batteries and components are contained in catalog, #20,00 (12 pp, 2 color). The positive grid spines are of non-corroding silvium.

The Electric Storage Battery Co.

Circle No. 2 on Inquiry Card-Page 17

#### BITUMINOUS COAL, COKE

A well-illustrated 108-page directory furnishes names and addresses of bituminous coal mines and coke ovens supplying the needs of industrial plants over the tracks of the B & O Rd.

Baltimore & Ohio Railroad

Circle No. 3 on Inquiry Card-Page 17

#### CASTERS, WHEELS

Catalog No. 125 has 56 illustrated pages replete with descriptions and specification data on hundreds of types and sizes of casters for industrial requirements. It is cross-indexed.

Hamilton Caster & Mfg. Co.

Circle No. 4 on Inquiry Card-Page 17

#### COPPER-JACKETED STEEL WIRE

The size range for steel wire, jacketed with copper by a new electro-plating process, is furnished in an 8-page illustrated booklet, No. 202. Charts show coating thicknesses.

National-Standard Co.

Circle No. 5 on Inquiry Card-Page 17

#### CURRENT LIMITING FUSES

Bulletin GEA-6319G (8 pp.) describes a line of current-limiting fuses, capable of interrupting short circuit currents up to 200,000 RMS symmetrical amps. It gives applications.

General Electric Co.

Circle No. 6 on Inquiry Card-Page 17

#### **CUTTING TOOLS**

High-strength oxide-base cutting tools are detailed in a 12-page catalog, No. 257. Table gives physical properties. Tool holders are listed as are throwaway and solid inserts.

The Carborundum Co.

Circle No. 7 on Inquiry Card-Page 17

#### END MILLS

A 16-page catalog supplies data on dimensions and prices of a full line of high speed end mills. A technical data section supplies helpful information on their proper selection and use.

Chicago-Latrobe

Circle No. 8 on Inquiry Card-Page 17

#### **FHP MOTORS**

Bulletin GEA-6424 in 16 full-color pages illustrates design advantages in integrated insulation system of general purpose flp motors used in such equipment as power tools, fans, etc.

General Electric

Circle No. 9 on Inquiry Card-Page 17

#### FIBER GLASS PLASTICS

Materials for fiber glass reinforced plastics are covered in a 14-page book, Catalog lists fiber glass cloths, tapes, chopped strand mats, etc. Sizes and grades of materials are given.

Cadillac Plastic & Chemical Co.

Circle No. 10 on Inquiry Card-Page 17



#### FITTINGS (BRASS TUBE)

All sizes and types of brass fittings are listed in a 48-page catalog. A section deals with drain and shut-off cocks. Data are supplied on right and wrong ways for tubing a system.

Weatherhead Co.

Circle No. 11 on Inquiry Card-Page 17

#### GLASSES (COMMERCIAL)

Properties of selected commercial glasses form text of 20-page bulletin B-83. Included are new types: aluminosilicate, low loss iron sealing, fused silica, ratiotron tube and capacitor.

Corning Glass Works

Circle No. 12 on Inquiry Card-Page 17

#### HOSE (AIRCRAFT)

The 88-page catalog, No. 101, is an easy reference guide to hose and fittings for the aircraft field. In addition to 666 Teflon hose, it covers low, medium, and high pressure hoses.

Aeroquip Corp.

Circle No. 13 on Inquiry Card-Page 17

#### HOSE (METAL FLEXIBLE)

Various types of flexible metal hose for original equipment or replacement are covered in illustrated catalog, No. 1D-100A. Recommended pressures, temperatures and uses are given.

Universal Metal Hose Co.

Circle No. 14 on Inquiry Card-Page 17

#### HYDRAULIC POWER UNITS

Complete technical data and specifications on 2,240 types of hydraulic power units including pumps, cylinders, pressure switches and accessories are furnished in a 52 page catalog.

Oil-Dyne, Inc.

Circle No. 15 on Inquiry Card-Page 17

#### MACHINERY (METAL WORKING)

Catalog No. 26 (66 pp.) describes, with hundreds of illustrations, a vast variety of shop equipment and supplies. It emphasizes requirements of small and medium metal fabricators.

Julius Blum & Co.

Circle No. 16 on Inquiry Card-Page 17

#### METAL CASES

A 62-page catalog describes deep-drawn and fabricated metal instrument cases, boxes and military cases. Photos, specifications and data show how to adapt 1400 stock sizes for many uses.

Zero Mfg. Co.

Circle No. 17 on Inquiry Card-Page 17

#### METAL FINISHING COMPOUNDS

More than 80 formulations for cleaning, stripping, deburring, etching and other finishing operations in the metalworking field are described and illustrated in bulletin No. 10.

Frederick Gum Chemical Co.

Circle No. 18 on Inquiry Card-Page 17

#### MOTORS

A condensed 4-page catalog lists prices for a line of ½-hp through 200 hp general purpose fractional and integral H.P. Motors, It includes slide base dimensions and adapter data.

Marathon Electric Mfg. Corp.

Circle No. 19 on Inquiry Card-Page 17

#### MOTORS, FANS, BLOWERS

Catalog No. 83 in 14 colored pages deals with the electrical characteristics and physical specifications of a line of specialty motors, fans and blowers. All are built to order.

Ashland Electric Products, Inc.

Circle No. 20 on Inquiry Card-Page 17

#### OIL SEALS

All oil seals carried in stock are listed in a fully illustrated catalog, No. 856-C (68 pages). A complete section describes, with photos, materials available for use as sealing members.

Chicago Rawhide Mfg. Co.

Circle No. 21 on Inquiry Card-Page 17

#### **PUMPS**

Circulating and coolant pumps for sidewall and immersion mounting are dealt with in a well illustrated flier, Form 7444. They have no stuffing boxes, no bearings and no couplings.

Ingersoll-Rand

Circle No. 22 on Inquiry Card-Page 17

#### SAWS

A colorful red and green envelope stuffer helps solve saw problems in ferrous and non-ferrous metals, plastics, wood and pulp materials. It enables proper blade selection for machines.

H. K. Porter Co., Inc.

Circle No. 23 on Inquiry Card-Page 17

Circle Card Opposite Page 17
to Obtain These Catalogs
Additional Catalogs on Page 20

For More Information Circle No. 166 on Inquiry Card—Page 17→

#### USING

# DU PONT ELASTOMERS



### How neoprene-jacketed cable protects Capital Airlines maintenance shop

#### HYPALON doubles service life of belt carrying salt at 302° F.

An elevator belt, with cover made of Du Pont's new synthetic rubber HYPALON, has twice the life span of the best rubber belts that had been used at a large chemical plant. The bucket belt-operating 80 hours a week - lifts hot salt from a rotary drying kiln to a loading platform. Average temperature of the salt is

The elevator belt with covers of Hypalon lasted six months - twice as long as rubber belts which would get brittle and crack.

Hypalon synthetic rubber has many excellent properties which help reduce your maintenance and replacement costs. Just fill out the coupon for more details.



Elevator belt with covers of HYPALON resists extreme heat of hot salt.



There may be gas vapors in this wing tank. So in Capital Airlines maintenance shop all electric cords are jacketed with neoprene for safety.

#### Contact with chemicals doesn't weaken cords

Capital Airlines leaves nothing to chance in its maintenance shop. For safety's sake, cables on all portable tools and trouble lamps are jacketed in neoprene.

These cords are used inside wing tanks and parts of the fuselage where gas vapors sometimes accumulate," says F. Schaub, Capital Airlines Safety Director. "It doesn't take much imagination to guess what would happen if a cord shorted inside a gas tank. That's why we must use the very safest - neoprene-jacketed cable.

"The cords frequently come in contact with gasoline, cleaning compounds,

paint thinner, acetone, hydraulic and lubricating oils which weaken other cord sheaths badly . . . weak spots that can lead to shorts . . . and trouble.

Mr. Schaub's experience with neoprene parallels the experience of engineers who have utilized neoprene's unique combination of properties for protective coatings, hose, gaskets, belting and other maintenance items. Resistance to oils and chemicals, heat, sunlight and weathering, flex cracking, abrasion and cutting, oxidation and aging - all combined into one resilient material-makes neoprene a wise choice for years of problem-free service. Just clip the coupon for more information on how neoprene can work for you.



HYPALON is a registered trademark of E. I. du Pont de Nemours & Co. (Inc.)

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#### SCREW LOCKS

Bulletin No. 738 is an 8-page guide to a full line of screw lock inserts, including a new miniature 4-40 size. Selection tables supply thread sizes and insert numbers and sizes.

Heli Coil Corp.

Circle No. 24 on Inquiry Card-Page 17

#### SHOT, GRIT (ABRASIVE)

SAE specifications of abrasive shot and grit are covered in a 16 page illustrated catalog. Methods and proper abrasive mixtures for shot peening and impact cleaning are shown.

Abrasive Shot & Grit Co.

Circle No. 25 on Inquiry Card-Page 17

#### SPRINGS

Factors influencing cost of coil springs are discussed in a 12-page guidebook. It aims to help precision spring buyers get the best springs at the most reasonable prices.

Hunter Spring Co.

Circle No. 26 on Inquiry Card-Page 17

#### STAINLESS BAR, WIRE

Some 45 types of stainless steel available in bar and wire form are described in a 24-page booklet. Electropolishing and ebonizing of stainless are also treated.

Armco Steel Corp.

Circle No. 27 on Inquiry Card-Page 17

#### STAINLESS SHEET, STRIP

A 32-page illustrated booklet details information on stainless steel sheet and strip. Over 20 tables give data on a stainless steel finder and corrosion resistance qualities.

Allegheny Ludlum Steel Corp.

#### TAPS

Circle No. 28 on Inquiry Card-Page 17

Facilitating tap selection and application is the purpose of a new catalog. It has tables on tap size selection and tap-drill and thread engagement. It also lists special taps.

Besly Welles "orp.

Circle No. 29 on Inquiry Card-Page 17

#### TOOLS AND GAGES

A new 96 page illustrated catalog, designated 36M, covers an entire line of precision tools and equipment. Included are several hundred items introduced for the first time this year.

Browne & Sharpe

Circle No. 30 on Inquiry Card-Page 17

#### TOOLS (STRIKING)

Catalog No. 57 furnishes, with copious photos, a full selection of forged-end tools available from one source. New designs incorporate special safety features and increased tool life.

**Damascus Steel Products Corp.** 

Circle No. 31 on Inquiry Card-Page 17

#### TRUCKS (INDUSTRIAL)

A complete line of industrial trucks is described in a 12-page, 2-color illustrated bulletin, No. 57. They include gasoline and LPG fork units. Many attachments are listed.

Baker-Raulang Co.

Circle No. 32 on Inquiry Card-Page 17

#### TUBE PRODUCTS

Stainless steel and high alloy pipe and tubing, ranging from  $\frac{1}{8}$ " to 40" OD, are covered in a 52-page, 2-color manual. The new method of welding pipe from bottom is described.

Trent Tube Co.

Circle No. 33 on Inquiry Card-Page 17

#### TUNGSTEN CARBIDE TOOLS

The 32-page, 2-color catalog, No. 357, describes and illustrates a full line of tungsten carbide tools, tool tips, dies, and wear parts. Also covered is sintered aluminum oxide.

Adamas Carbide Corp.

Circle No. 34 on Inquiry Card-Page 17

#### V-DRIVES

FHP V-drives, drive parts and accessories form the text of 48-page catalog, No. F-10. It gives size data on bushed and fixed-bore type V-pulleys, and on interchangeable bushings.

Maurey Mfg. Corp.

Circle No. 35 on Inquiry Card-Page 17

#### VALVES

An entire semi-steel valve line is covered in the 43-page bulletin, V-203, Rev. 1. Two illustrated pages deal with lubricants and lubrication methods. Tables supply specifications.

Rockwell Mfg. Co.

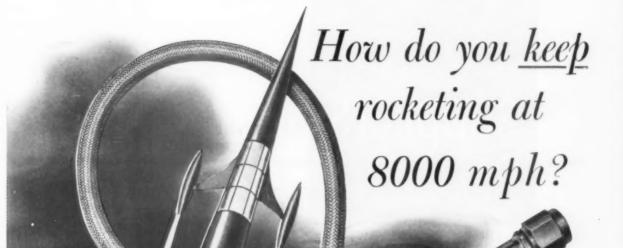
Circle No. 36 on Inquiry Card-Page 17

#### WELDING, RESISTANCE

Production of electrical assemblies by resistance welding is reviewed in a 12 page bulletin. Discussed is a line of welders for contact, terminal, and conductor assemblies.

Taylor-Winfield Corporation

Circle No. 37 on Inquiry Card-Page 17



For one thing, you feed your rocket fuel—
savagely corrosive stuff, like white and
red fuming nitric acid. You use a fuel line of
Teflon hose, wrapped in stainless wire braid—
with special stainless steel fittings to make it
stay put.

The fittings are swaged on — and listen to a few of the 19 test beatings they get. In an impulse test, with fluid temperature at 400° F., an impact of 4500 psi is applied, and reduced to zero in one second. The cycle is repeated 35 times a minute — for 100,000 cycles.

Another test, at 450° F., submits the hose and fittings to vibration at 2000 cycles per minute through 3/4" lateral movement. This grueling test is applied for 200 hours... is followed by a severe high-pressure test to assure a leak-proof seal. It's hard on the fittings...but a positive test of durability.

Frasse has provided trouble-free stainless steel for this vital fitting application since its inception — and often supplied it in hours, to meet production deadlines. So, if you want reliability in your product, and a reliable source of supply...rely on Frasse for all your stainless requirements. It's a habit you'll find profitable.

Call FRASSE for complete stainless steel service

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# suppliers

## in the news

Announcement of the appointment of F. V. Gieryn as sales manager of the industrial depart-



F. V. Gieryn

ment has been made by the Machinery Hydraulics Division, Vickers Incorporated, Mich. Mr. Gieryn was formerly manager of export sales. He will now supervise sales of the company's hydraulic units and systems for machine tools and other plant production machinery through 20 industrial sales offices located throughout the United States.

Anton J. Kuhn, Jr. has been assigned as field representative for the Chicago area of **Peerless Steel Equipment Co., Philadelphia, Pa.** He will maintain offices

and warehousing facilities at 1545 S. South Street.

Fred L. Fox, assistant general sales manager of Superior Steel Corp., Carnegie, Pa., has been given responsibility for sale of the company's alloy and spring steel products. He continues to be in charge of sales for clad metals and bullet cups.

Jarvis Corporation, Middletown, Conn., has announced the appointment of Ernest F. Dooley



E. F. Dooley

as carbide tool engineer. Mr. Dooley has been active in the carbide field since 1943. He will be responsible for sales liaison in the division and trouble shooting of tooling problems in the field.

George H. Williamson has been elected vice president in charge of West Coast activities by the



G. H. Williamson

board of directors of American Chemical Paint Co., Ambler, Pa. His new responsibilities will include supervision of all the company's activities, sales and service of metalworking and agricultural chemicals and processes, and manufacturing at the plant in Niles, Calif.

Roll Formed Products Company and Hynes Steel Products Company, Youngstown, Ohio, have appointed Donald Spring as sales representative for both firms in western Ohio and eastern Indiana. Mr. Spring's headquarters will be in Lima, Ohio.



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We really don't grow them this way but we do produce them diversified, abundant, and of top Quality.

We get them to you promptly, bulk or packaged, from a warehouse near you. Over one billion fasteners in stock! From our wide range of sizes, heads, and materials, we meet your most specialized and unusual fastener requirements. Write for free samples and Stock List. Box 1360-P, Statesville, N. C.



Wood Screws ● Machine Screws & Nuts ● A&B Topping

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Dawel Screws . Stave Balts . Hanger Balts

Roll Incead Carriage Bolts

Warehouses: NEW YORK CHICAGO DALLAS LOS ANGELES



J. C. Hendricks, sales manager, folding carton, of the Robert Gair Division of Continental Can Co., New York, has transferred his headquarters to New York City from Chicago. Charles A. Colbert, western sales manager, has changed his headquarters from Chicago to the carton fabricating plant at Elkhart, Indiana.

George E. Herrmann has been named manager of commercial automotive sales for **Aluminum** 



G. E. Herrmann

Company of America, Pittsburgh, Pa. Mr. Herrmann, previously at the company's Detroit district sales office, will be located in Pittsburgh. He will coordinate the company's research, development, advertising, publicity and sales efforts in the commercial automotive field.

Additional "Suppliers in the News"
will be found following the
Industrial Development section

The appointment of John A. Berka as sales representative in Newark, N.J., has been announced by Mueller Brass Co., Port Huron, Mich. He will assist Ray Cary, district sales manager of the Wholesale Distributing Division, in the sale of standard steamline plumbing, heating, refrigeration and air conditioning products to the wholesale trade.

Two vice presidents-commercial have been elected to direct all sales activities of Jessop Steel Company and its subsidiaries, Washington, Pa. T. W. Gabriel



T. W. Gabriel

and S. J. Clokey have been assigned to the positions. Mr. Gabriel came to the company in 1953 from Firth-Sterling Steel and Carbide Corp., where he was district sales manager in Cleveland and general sales manager between 1944 and 1949. Prior to



S. J. Clokey

that, he was associated with the former Carnegie-Illinois Steel Company where he advanced to

assistant to the district manager of sales in New York. Mr. Clokey joined the company in 1940. He previously was associated with the Firestone Tire and Rubber Co. and the Mutual Life Insurance Company of New York.

Raymond W. Ayers has been made sales manager of Revere Corp. of America, Wallingford, Conn. Mr. Ayers was formerly manager of the Industrial Division of North Electric Co., Galion, Ohio. Prior to that he was executive vice president and general manager of Allen D. Cardwell Manufacturing Corp., Plainville, Conn.

Anthony Maladra has been appointed sales manager by KSM Products, Inc., Stud Welding Division, Merchantville, N. J.

Robert McNeal Smith has been appointed to the sales organization as assistant vice president of Russell, Burdsall & Ward Bolt



Robert M. Smith

and Nut Co., Port Chester, N. Y. Prior to joining the company, Mr. Smith served 16 years with Pittsburgh Screw & Bolt Corp., most recently as vice president in charge of eastern sales. Previously he was employed by Ruthrauff & Ryan, Inc., New York.

Wallace M. Schleicher, formerly general sales manager for Edison Storage Batteries, has been named manager of motive power and railroad sales, for C & D Batteries, Inc., Conshocken, Pa.



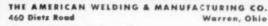
# COSTS OUGHT TO COME DOWN

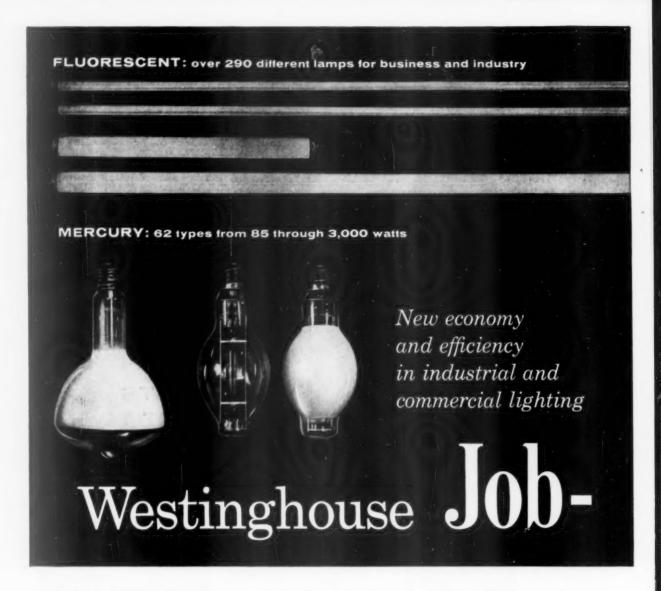
As America's missile and rocket programs progress from the experimental to the production stage, cost must necessarily be a big factor.

necessarily be a big factor.
Most missiles and
rockets are expendable,
one-shot units. This, too,
makes cost a more
important factor.
American Welding's
unique ability to form,
flash weld and fabricate
rings, circular compo-

nents and other production parts is the answer to production costs.

For further information, contact the Industrial Products Division of The American Welding & Manufacturing Company.





## Now you can have exactly the right kind of lamp in exactly the right size for every individual lighting job

Westinghouse again demonstrates its leadership in lighting with lamps Job-Tailored to cut costs, reduce accidents, improve both "See-Ability" and morale. All this is possible because Westinghouse produces more than 10,000 kinds of lamps with exclusive developments like those below which give you more for your lighting investment.

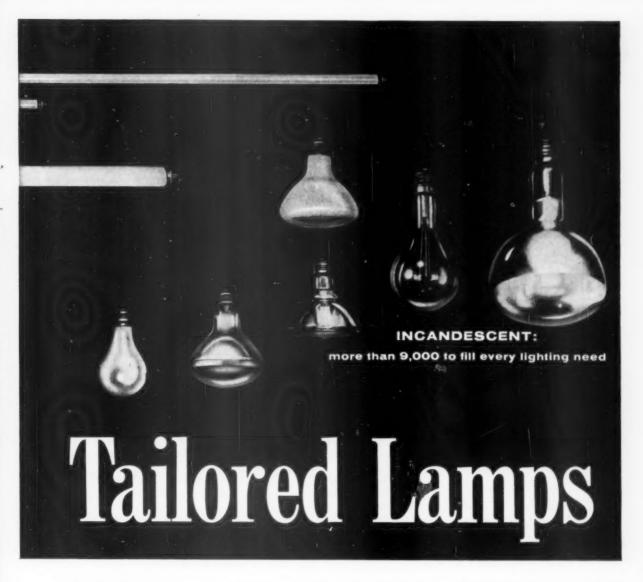
Fluorescent Lamps, for example, have a new highintensity phosphor—*Ultralume*™—which gives more lumens per watt plus uniform end-to-end light for the life of the lamp.

Mercury Lamps with special "hard" glass Weather  $Duty^{TM}$  construction. Can't be harmed by snow, rain,

condensation-even without protective coverings.

Incandescent Lamps provide an extra measure of quality with exclusive  $Lifeline\ Filament^{TM}$ —made possible because only Westinghouse controls the manufacture of filaments from tungsten ore to finished wire.

In addition, Job-Tailored lamps give you more light from existing fixtures. By standardizing on bases, bulb sizes and light center lengths, Westinghouse provides a high degree of lamp interchangeability. As a result, with many Westinghouse lamps, you may increase light output to more efficient working and safety levels without changing fixtures.



FREE WESTINGHOUSE JOB-TAILORED LIGHTING SURVEY SHOWS YOU HOW TO GET THE MOST FOR YOUR LIGHTING DOLLAR. To enable you to spot places in your present lighting installations where incorrect lamps may be costing you money, call in a Westinghouse Lamp Representative. With your plant engineer or maintenance supervisor, he will inspect your lighting installation, make a careful analysis of his findings, and report his recommendations. To get this free service, simply fill out the coupon. You'll be dollars ahead with Westinghouse JOB-TAILORED lighting.

Westinghouse

| WESTINGHOUSE ELECTRIC CORPOR   | ATION |
|--|-------|
| Industrial-Commercial Lighting Ser<br>Bloomfield, New Jersey   | vice  |
| Please have your Lamp Represent<br>area make an appointment with our to<br>arrange a survey of our lighting ne | Mr    |
| NAME   |       |
| COMPANY  |       |
| ADDRESS  |       |
| CITYZONE   | STATE |
| FULL NAME OF PLANT ENGINEER_   |       |
| PHONE NUMBER   |       |
| I am interested in ☐ incandescent ☐ fluorescent ☐ mercury lighting.  | (W)   |
|  |       |



#### More built-in EXTRAS

for more service . . . more convenience . . . more value!



GENEROUS 5-YEAR GUARANTY

Broadest in the industry! You get a new cooler if failure occurs in the Hermetic Refrigeration System or Cooling Tank...and Cordley pays freight both ways. Get a copy—see for yourself!

### CORDLEY OFFERS ALL THESE FEATURES...and many more!

- · Solid stainless steel splash-proof top
- · Squirt-proof bubbler jet
- Fully sealed refrigeration system
- 7-point thermostat
- Contamination-proof refrigerant coils bonded externally
- Extra service connections—for both glass filler and remote outlets
- Bubbler jets aimed for easy drinking – no neck craning
- · Attractive, adaptable styling



There's a Cordley cooler to meet any drinking water requirements!

Valuable Free Bulletin . . .

"HOW TO SELECT A WATER COOLER"
Write Today!

#### CORDLEY & HAYES

443 Fourth Avenue, New York 16, N. Y.

For More Information Circle No. 171 on Inquiry Card—Page 17 f.o.b.

### filosofy of buying

IF YOU WANT to be a Big Executive, learn to talk like one. The following glossary of executive terms may be helpful:

A Program—Any assignment that can't be completed by one telephone call.

To implement a program—Hire more people and expand the office.

To activate a program—Make more carbon copies and add more names to the memo.

Channels—The trail left by inter-office memos.

Expedite—Confound confusion with commotion.

Coordinator—The fellow who has a desk between two expediters.

Note and initial—Let's spread the responsibility for this.

Under consideration — Never heard of it.

Under active consideration— We're looking for it in the files.

We are making a survey—We need more time to think of an answer.

Will advise you in due course—
If we figure it out, we'll let you know.

Give us the benefit of your present thinking—We'll listen to what you have to say so long as it doesn't interfere with what we have already decided to do.

Let's get together on this—I assume you are just as confused as I am.

Reliable source—The fellow you just met.

Informed source—The fellow who told the fellow you just met.

Unimpeachable source — The fellow who started the rumor in the first place.

Re-orientation — Getting used to working again.

Clarification—To fill in the background with so many details that the foreground goes underground.

To give someone the picture— A long, confused and inaccurate statement to a newcomer.

Spearhead the issue—You be the goat.

The issue is closed—I'm tired of the whole affair.

GEORGIA state employees receive an auto mileage allowance of six cents per mile when they use their cars on state business. When it was proposed to raise this to seven and a half cents per mile, an economy-minded legislator proposed an alternative plan: keep the mileage allowance at six cents, but permit the employees to buy cars at a discount through the State Purchasing Department. By this simple application of the "I can get it for you wholesale" philosophy, it was pointed out that the state would save about \$650,000 a year; everybody would be happy at "no cost to anyone." But State P. A. Lawton Shaw would doubtless be in a \$650,000 headache deciding who was entitled to the cut-rate buying privilege and trying to pacify the car dealers, who are not enthusiastic about the proposal.

THE Industrial Division of Minneapolis-Honeywell has issued a booklet for the guidance of its technical writers, entitled "Why Not Just Tell Them?" Its purpose: to eliminate the complicated jargon known as "Engineeringese" that is found in a lot of today's industrial writing and usually confuses a point rather than clarifying it. Some typical examples:

(a) The machine has a tendency to develop excessive and unpleasant audial symptoms when operating at elevated temperatures.

(b) This method permits operational economies by decreasing the amount of horsepower used to fulfill the demand.

(c) The switch is used to initiate or terminate the pumping action.

For an English translation of these profound statements, in terms that even a P. A. can understand, why not say:

(a) The machine is noisy when it runs hot.

(b) This method uses less horsepower.

(c) The switch turns the pump on and off.

PRIZE WINNING P. A. is W. D. Ford of Artisan Metal Works, Cleveland. He received one of the top awards in the "Fixin-'56" exterior remodeling contest sponsored by the Cleveland Press. The ambitious do-it-yourself project that earned the judges' approval involved cutting a garage in half, moving one section out away from the house, and reconnecting it by building a new center section that provided a roomy 2-car garage and storeroom.

Irony of the situation is that Ford was a reluctant contestant. "Before we moved here," he says, "we had lived in two new houses, doing all the original landscaping and building garages. I was determined to buy one where some one else had done all the work, so I could sit down and rest." But no sooner had the family moved into the 7-year-old house in the Parma Heights section than the need for remodeling became apparent. "I haven't rested yet," says Ford.



Just to name a few... and most of the parts we are making to special order don't really have a name! Our real specialty is fabricated wire cloth parts, made to your specifications.

Any metal, almost any size, almost any shape...we can probably assemble it for you... faster, better and at a lower cost, than you can do it yourself.

For more information, just send for our latest Fabricated Parts Catalog.



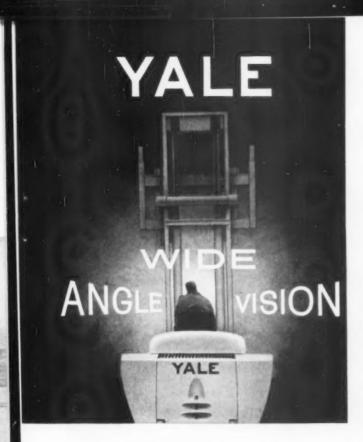


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For More Information Circle No. 174
on Inquiry Card—Page 17→

# 300% MORE VISIBILITY





#### Premium Engineering Features — Included as Standard — Give Top Performance Under Toughest Conditions:

- I-beam side members in frame for extra strength.
- Channels mounted on ball-bearing rollers to reduce friction and wear.
- · All controls conveniently located.
- · Power steering and power brakes.
- · Yale Fluid Coupling or standard transmission.
- Designed for a complete set of attachments, engineered for minimum loss distance.

CAPACITIES: 15,000 to 20,000 lbs.

# IN NEW HIGH-CAPACITY GAS TRUCKS

Operator sits high and in center. Upright channels are wide-spaced, nested to reduce frontal obstruction. Right next to them—the hoisting cylinders, one right, one left. Chains that raise carriage are in front of cylinders—out of the arc of vision. Carriage has one top bar, one bottom bar—good visibility between them at all levels of fork lift. Result: Yale's exclusive "Wide-Angle Vision" assures safer, faster, more efficient handling of heavy loads.

#### GREATER STABILITY...FAST CYCLE OPERATION

New Yale High-Capacity Gas Trucks have low center of gravity, with high underclearance, and a broad lifting base afforded by two ball-mounted lift cylinders. To further increase stability factor, there is wide channel-roller spacing at all points of lift, plus side-thrust rollers on channel and carriage. Large-size, high-flotation tires give good traction. For fast cycle operation, these trucks have lifting speeds up to 60 feet per minute...fast, safe lowering...travel speeds up to 20 MPH...excellent maneuverability.



#### INDUSTRIAL LIFT TRUCKS AND HOISTS

YALE & TOWNE

GASOLINE, ELECTRIC & LP-GAS INDUSTRIAL LIFT TRUCKS . WORKSAVERS WAREHOUSERS . HAND TRUCKS . HAND AND ELECTRIC HOISTS

YALE MATERIALS HANDLING DIVISION, A DIVISION OF THE YALE & TOWNE MANUFACTURING CO. MANUFACTURING PLANTS: PHILADELPHIA, PA.; SAN LEANDRO, GALIF.

City\_

To meet the need of expanding industries for better materials handling methods and equipment, look to Yale for advances in research, engineering, manufacturing, sales and service—as

YALE BUILDS FOR THE MEW EDA

The YALE & TOWNE Manufacturing Company Roosevelt Blvd., Philadelphia 15, Pa., Dept. A-257 Please send the new Yale High-Capacity Gas Truck brochure No. 5230.

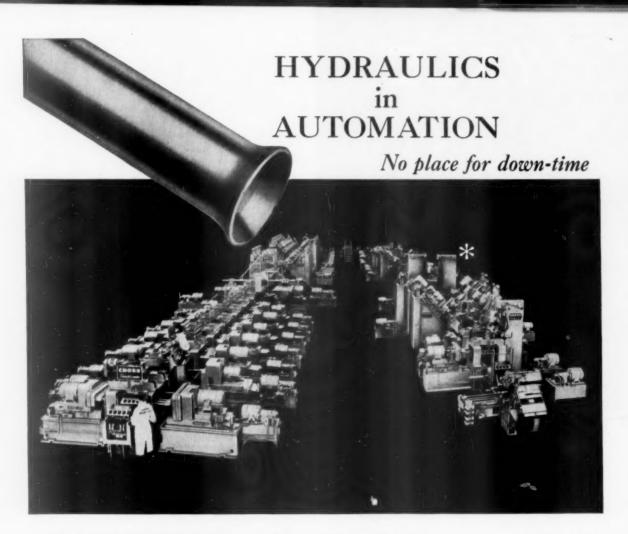
Name Title

Company\_\_\_\_\_\_Address\_\_\_\_\_

In Canada: write The Yale & Towne Manufacturing Co., St. Catharines, Ontario, Canada

Zone

State



### that's why CROSS specifies HYDRALUSTER tubing exclusively!

Hydraluster tubing is carrying the vital load of hydraulic transmission in this 350 ft. Cross transfer machine. Hydraluster is there because every part and assembly has to be 100 per cent dependable. There is too much at stake for anything less.

Why does Hydraluster get the call? . . . because it is a revolutionary improvement over any previous type of hydraulic tubing. Inside, Hydraluster has a new type of tubing surface, very much like a gun barrel. This smoothness cuts friction and heat, and the result is higher power efficiency and lower reaction times. This new surface is also highly resistant to oxidation and

scale...added protection for valves, pumps and meters. Here we quote Mr. Ralph E. Cross, Executive Vice President of The Cross Company. "We've used Sum-

merill Tubing for years because we felt it was the best. And when Summerill topped even their best with Hydraluster, it was only logical that we go along with the improvement."

\*Stations-104. Operations-265 drilling, 6 milling, 21 boring, 56 reaming, 101 countersinking, 106 tapping, and 133 inspection.

SAMPLES and SPECIFICATIONS: Examine Hydraluster right at your desk or board. Your name on company stationery will bring samples and specifications.



#### Tubing Company Division-Columbia Steel & Shafting Co.

PITTSBURGH 30, PA.

DEPT. NO. 6-13

District Offices: Los Angeles . Philadelphia

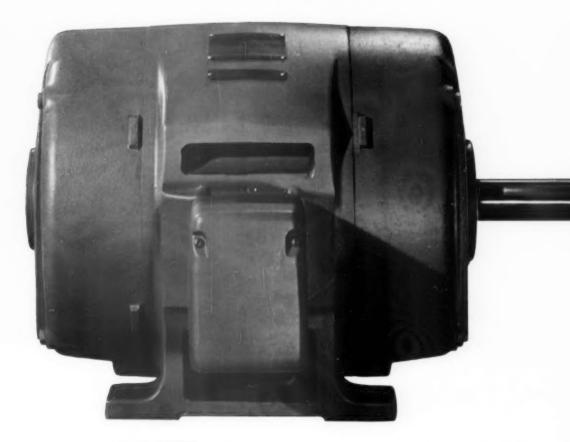
Chattanooga Pittsburgh

Chicago Milwaukee \*

San Francisco

For More Information Circle No. 175 on Inquiry Card—Page 17 For More Information Circle No. 176 on Inquiry Card—Page 17→ PURCHASING

FROM GENERAL ELECTRIC



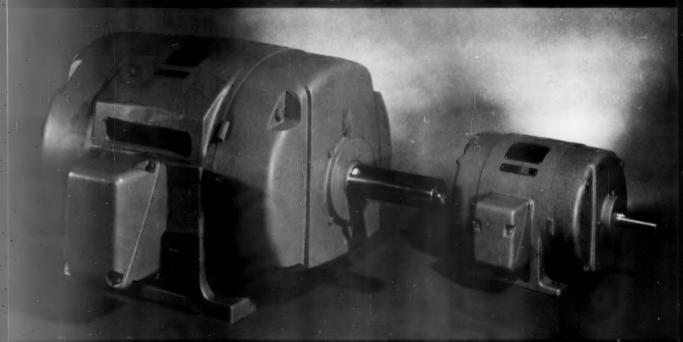
TRISTICIAD MOTORS
NOW UP TO 125 HP

GENERAL 🍪 ELECTRIC

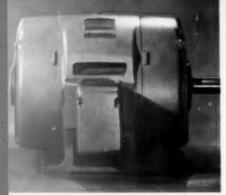
compact...power-packed

General Electric TRI 55 CLAD

DRIPPROOF



DESIGNED, BUILT AND TESTED



FULLY PROTECTED by cast-iron enclosures, Tri-Clad '55' motors handle many jobs where ordinary dripproof motors cannot be applied.



MYLAR\* slot insulation, Formex® wire, non-wicking Geoprene® leads and Dri-Film® silicone coating increase stator life up to 50%.



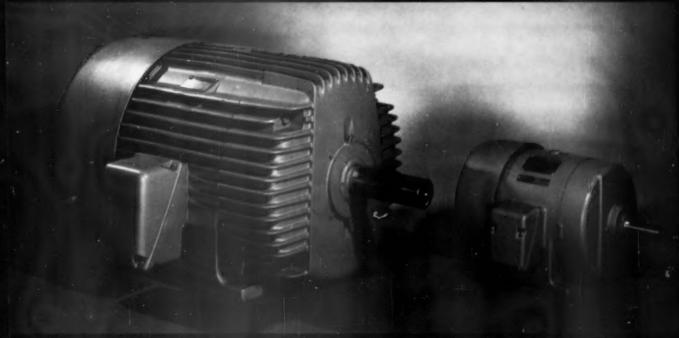
IMPROVED ROTORS are solid cast of pure aluminum for greater strength, higher conductivity. Rator bars are insulated from core to improve motor efficiency.

GENERAL 3 ELECTRIC

## **Motors in New NEMA Ratings**

# TO 125 HP

TOTALLY ENCLOSED



#### LONGER LIFE, EASIER MAINTENANCE



BEARING SYSTEM uses over-size ball bearings, synthesized grease, long, close-running seals to extend motor life.

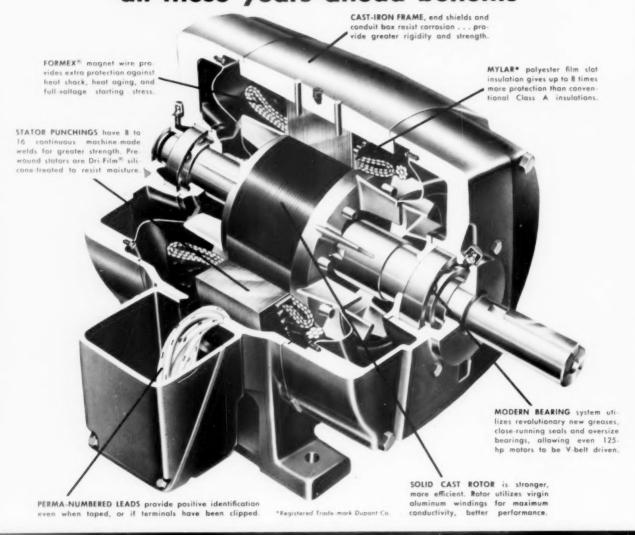


PERMA-NUMBERED LEADS and roomy conduit box facilitate motor hook-up. Knock-off lugs speed end shield removal for motor inspection.



GENERAL ELECTRIC Tri-Clad '55' motors must pass a series of sound, vibration and hi-potential tests prior to shipment. Rigid tests assure uniform high-quality, and long-life performance.

## Only G-E TRI GCLAD motors give you all these years-ahead benefits



#### INFORMATION FOR COMPLETE

Tri-Clad '55' motors up to 125 hp, contact your Section 891-3 local G-E motor distributor or the motor spe-GENERAL ELECTRIC COMPANY cialist at your nearby General Electric Appa-Schenectady 5, New York Please send me the following publications: ratus Sales Office. They will give you expert FREE BULLETIN (GEA-6602) describing the many advanced features of new assistance in selecting and applying the right Tri-Clad '55' motors up to 125-hp. motor for your particular application. FREE SLIDE RULE (GEN-148) to determine weight and space-saving benefits For free slide rule to determine weight and of new Tri-Clad '55' motors. space-saving benefits of the new motor, and for informative General Electric Tri-Clad '55' NAME motor bulletin, please send attached coupon. TITLE COMPANY

ADDRESS CITY & STATE Progress Is Our Most Important Product

FOR COMPLETE DETAILS on the new line of

GENERAL & ELECTRIC



CHETT HUNTLEY: "Paper communicates in two ways... to the eye... to the touch. It may speak with urgency or eloquence. But it is never without a voice."—Mr. Huntley is a noted NBC news analyst and reporter.

#### Better papers are made with Cotton Fiber\*

Cotton fiber is king among papermaking materials. It provides unequalled beauty, strength and permanence. Has for generations. United States currency, for example, is engraved on paper containing cotton and linen fiber. Because of its unique characteristics and the special equipment used in its processing, cotton fiber makes a top quality paper through and through. When you buy paper—buy value. Specify cotton fiber papers.

YOUR SUPPLIER KNOWS ... why papers made of cotton fiber (25% minimum to 100% in the best grades) perform better in a variety of uses. Ask him about cotton fiber business and social stationery, indexes, ledgers, onion skin and drawing, tracing, blue print and other papers.



\*LOOK FOR "COTTON" OR "RAG" IN THE WATERMARK OR LABEL

@ Cotton Fiber Paper Manufacturers, 122 East 42nd St., New York City



## Why designers specify FLEXLOC self-locking nuts

Where products must be tough . . . must stand up under vibration, shock and abuse . . . designers specify rugged, reliable, precision-built FLEXLOC self-locking nuts as fasteners.

#### HERE'S WHY:

FLEXLOC locknuts are strong: tensile strengths far exceed accepted standards. They are uniform: carefully manufactured to assure accurate, lasting spring tension in the flexible locking collars. And they are reusable: rough screw threads,

repeated removal and replacement, frequent adjustments will not affect their locking life.

Standard Flexloc self-locking locknuts are available in a wide range of standard sizes and materials, to meet the most critical locknut requirements. Your authorized industrial distributor stocks them, Write us for complete catalog and technical data. Flexloc Locknut Division, STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.

STANDARD PRESSED STEEL CO.

FLEXLOC LOCKNUT DIVISION



For More Information Circle No. 178 on Inquiry Card-Page 17

## What's YOUR Roller Bearing Problem? HYATT BUILDS AMERICA'S MOST COMPLETE LINE OF CYLINDRICAL ROLLER BEARINGS TO SOLVE IT

#### HYATTS ARE DESIGNED:

FOR SPEEDS UP TO 50,000 RPM

From bearings for slowmoving construction equipment to supersonic jet engines, Hyatt builds roller bearings to meet almost any speed requirements.



FOR TEMPERATURES FROM BELOW ZERO TO 450°F.

Conventional steels can be stabilized by heat treatment for operation up to 450°F. Beyond this we can provide special high-temperature steels for special needs.



FOR LOADS RANGING UP TO 103,000 POUNDS

From small bearings for lawn mowers to the huge heavy-duty types used in giant diesel locomotives, Hyatt builds bearings for every load requirement!



IN SIZES RANGING FROM %" OD TO 14" OD

Hyatt offers a wide variety of bearing types and sizes. Each Hyatt Roller Bearing assures maximum life in each individual application.

#### BETTER!

Life, load, speed, temperature, shaft location—almost every roller bearing application problem you are likely to face has *already* been encountered by Hyatt engineers.

Armed with a complete line of bearings, they can usually come up with an answer to your particular design problem. In addition to competent design assistance, you can also depend upon the consistent high quality and uniformity of Hyatt Bearings.



High-capacity cylindrical roller bearings for heavy radial loads and light or intermittent thrust loads.



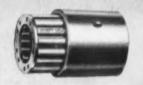
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INDUSTRIAL INCH

Designed for slow-moving, heavily-loaded machinery where large-diameter shafts are usually employed.



For industrial trucks, textile machinery, gear pumps, conveyors, hoists and agricultural equipment.



WOUND ROLLER

A three-part separable searing, which provides maximum resistance to shock, abrasion and fatigue.



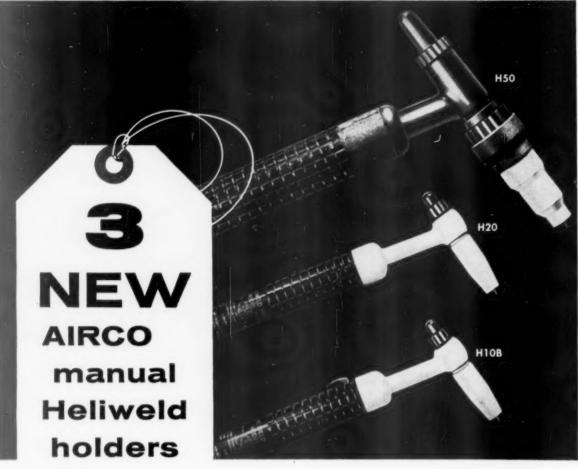
These are a few of the reasons why experienced design engineers have learned to reach for a Hyatt catalog. If you need the technical assistance of a sales engineer, call or write Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey, Pittsburgh, Chicago, Detroit, Oakland, Calif.

AVAILABLE THROUGH UNITED MOTORS SERVICE DISTRIBUTORS EVERYWHERE



FOR MODERN INDUSTRY

For More Information Circle No. 179 on Inquiry Card-Page 17



#### for greater flexibility in tungsten arc welding

Wider and higher current ranges of these three new Heliweld holders add a new measure of versatility in the welding of thin gauge sheet aluminum, stainless steel, copper base alloys, magnesium and killed steel.

Water-cooled H50 Heliweld holder has a continuous duty rating of 500 amps DC and 350 amps AC. New nozzle and holder design provides efficient gas coverage at reduced gas flow...costs less to operate. Stub loss only 1½". Parts interchangeable with M50 machine holder.

Water-cooled H20 Heliweld holder has a continuous duty rating of 200 amps, AC or DC, yet is only 7¼ inches long; weighs 4 ounces. Compactness of the welding head makes the H20 ideal for welding in tight corners. Parts interchangeable with the H10.

H10A and H10B Heliweld holders, both air-cooled, have continuous duty ratings of 100 amps, AC or DC. The H10B holder is the *only* unit on the market that has a thumb-operated gas valve on the handle for greater gas savings.

For complete information consult your nearest Airco Office or Authorized Airco Dealer.

AT THE FRONTIERS OF PROGRESS YOU'LL FIND ...



#### AIR REDUCTION SALES COMPANY

A division of Air Reduction Company, Incorporated 150 East 42nd Street, New York 17, N. Y. On the west coast — Air Reduction Pacific Company

Internationally — Airco Company International

In Cuba — Cuban Air Products Corporation

In Canada -Air Reduction Canada Limited

Products of the divisions of Air Reduction Company, Incorporated, include: AIRCO — industrial gases, welding and cutting equipment, and acetylenic chemicals • PURECO — carbon diaxide — gaseous, liquid, solid ("DRY-ICE") • ONIO — medical gases and hospital equipment • NATIONAL CARBIDE — pipeline acetylene and calcium carbide • COLTON — polyvinyl acetate, alcahols, and other synthetic resins.

For More Information Circle No. 180 on Inquiry Card-Page 17

For More Information Circle No. 181 on Inquiry Card—Page 17→ PURCHASING cut it with

stop

MAPEWELL



## power hack saw blades



SOLD ONLY THROUGH CAPEWELL DISTRIBUTORS

who provide: complete inventory

... engineering assistance

... delivery when you need it.

THE USER: Reisner Forge Company, South Gate, California

THE MATERIAL: Stainless Steel Billets

THE JOB: High speed production-line power hack sawing

THE PROBLEM: Blade breakage . . . too few cuts per blade

THE ANSWER: Capewell Safetech Power Hack Saw Blades

THE RESULT: Long blade life . . . blade breakage virtually eliminated.

The Reisner Forge Company chose Capewell's <u>shatterproof</u> Safetech Blade for this long, heavy job because they could get more cuts per blade quickly and economically under heavy feed, while providing complete operator safety. Other Capewell Power Hack Saw Blades are Technite and High Speed—each of these all-hard blades is designed to give proved maximum sawing performance.

You, too, can improve your production by standardizing on Capewell Power Hack Saw Blades. Tooth by tooth, you'll find that Capewell blades are a superior product, manufactured to rigid specifications, so that you can be assured of blades that stay sharper longer.

#### THE CAPEWELL MANUFACTURING COMPANY Hartford 2, Connecticut

Please send complete details on Capewell Power Hack Saw Blades to:

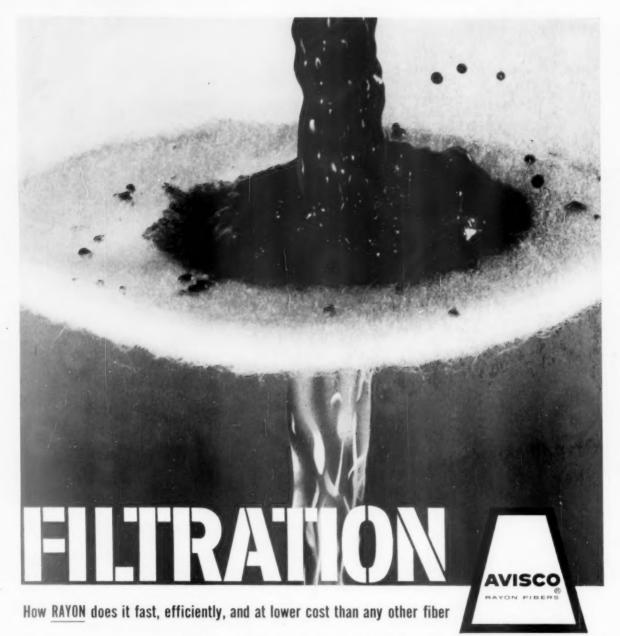
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COMPANY

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STATE

ZONE



What makes rayon superior in performance yet lowest in cost for all types of smoke, air and liquid filtration?

Man-made — First of all, rayon is a manmade fiber. That means its physical properties can be manufactured to meet specific filtration needs. Fiber size, weight, roughness and length can be carefully controlled during production so that the finished filter is tailored to do the exact job for which it was created. Further, rayon can be "crimped" or bent into tiny waves that increase the number of filter traps.

Non-channeling—Next, a filter made from crimped rayon staple does not channel—that is, the fibers form a barrier that keeps air, smoke or liquid from following straight paths.

Hooks and holds—The rayon fiber is rough-edged, too—tends to hook and hold passing impurities. Slicker fibers can't snag particles like rayon can.

**Even-staining**—Rayon stains evenly. This may be attributed only to high uniformity of filtration.

Controlled fiber length—The length of the rayon fiber is controlled, assuring better filtration at a steady, uniform flow. Uncontrolled lengths cause channeling and clogging, reduce efficiency.

Variety of densities - Most important, practically any filter density can be

produced with rayon, due to the infinite webbing patterns possible with different deniers.

Low cost—All these superior filtering qualities come to you at lower cost than with any other filter fiber. Techniques for mass-producing rayon, developed over the past half century by American Viscose Corporation, make this low price possible.

Rayon filters simply cannot be matched for versatility, efficiency and low cost. We would be happy to show you further how you can use rayon filters for a more profitable business.

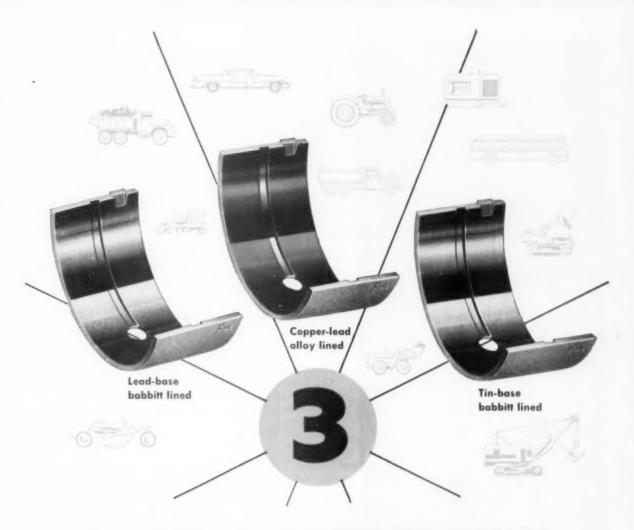
#### AMERICAN VISCOSE CORPORATION

350 Fifth Avenue, New York 1, New York



# Call on Redmond to Design, Develop, and Produce Rotating Electrical Mechanisms





#### bearings that meet the widest range of engine applications

Across the broad range of engines which impose light or medium loads on the bearings, tin-base and lead-base babbitt-lined bearings are the economical, dependable "work horses". For the newer engines imposing heavy loads, bearings lined with copperlead alloy are the answer. Using our patented, low oxide copper-lead powder alloy as the heart of the lining, steel-backed copper-lead bearings produce new performance standards in heavy-duty operation. For complete information address:

#### FEDERAL-MOGUL DIVISION

Federal-Mogul-Bower Bearings, Inc.

11077 Shoemaker, Detroit 13, Michigan







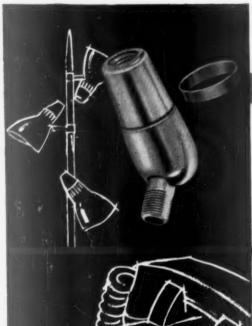




SINCE 1899

DESIGN . METALLURGY PRECISION

For More Information Circle No. 185 on Inquiry Card-Page 17



#### How three manufacturers use Anaconda superfine-grain alloys

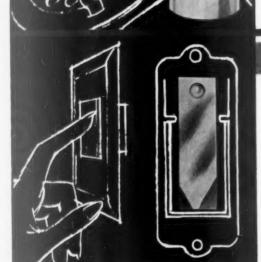
makes swivel lamps swivel better

Berger Machine Products of Maspeth, New York, manufacturers of lighting-fixture parts, had a problem with a swivel fixture. To allow adjustment of the reflector, the two steel parts (illustrated) have to rotate 350 degrees. Steelon-steel froze and locked. A brass ring bushing helped, but being soft allowed the steel to cut in and bind. Berger tried Duraflex, Anaconda's superfine-grain phosphor bronze, and found the answer. Its springiness, hardness and wear-resistance made a snug fit which turned easily and would hold in any position.



FORMBRITE® helps finish phone locks faster

Tele-Lock, an ingenious device for locking a dial phone, is encased in a chromium-plated brass cup. Slaymaker Lock Co., Lancaster, Pa., was using ordinary drawing brass for this cup and found finishing costs high. They turned to Formbrite, Anaconda's superfine-grain forming brass. The cups were easy to form; the slight extra spring and hardness made the fit perfect. The smooth surface of Formbrite eliminated one polishing operation and provided an ideal surface for a lasting chromium plate.



makes superior contacts for Touch-Plate®

Touch-Plate Mfg. Corp., Long Beach, Calif., makes lowvoltage switch systems for control of lighting in the home. It takes only a flick of the finger or elbow on the momentary contact switches to actuate a relay, or set of relays, which turns lights on or off in one room or through the house. For the contact strips in Touch-Plate wall switches they now use Duraflex, Anaconda's superfine-grain phosphor bronze, because they found it has more spring better recovery properties. Duraflex is now used also for contacts in the relays which operate the Touch-Plate system.

FOR INFORMATION WRITE: The American Brass Company, Waterbury 20, Conn. In Canada: Anaconda American Brass Ltd., New Toronto, Ont.

The new superfine-grain phosphor bronze with greater endurance limit.

The new superfine-grain drawing brass that cuts finishing costs.

ANACONDA

MADE BY THE AMERICAN BRASS COMPANY

For More Information Circle No. 186 on Inquiry Card-Page 17 For More Information Circle No. 187 on Inquiry Card—Page 17→ PURCHASING



TYPE FP WIRE BRAIDED

## 

HEAVY DUTY INTERLOCKED



LIGHTWEIGHT SQUARELOCKED
Unpacked, cord packed, light asbestos
packed, heavy asbestos packed

## FLEXIBILITY

DEFIES HEAT...FATIGUE ABRASION...LEAKAGE

Penflex is ruggedly built hose with all of the flexibility required, plus the toughness and durability of metal. No matter how hot the material to be conveyed Penflex cannot be cooked like ordinary hose. It stubbornly defies rough abuse, abrasion and crushing.

From ½" I.D. to 24" I.D. . . . bronze, galvanized steel, or stainless steel . . . from an air compressor line to a diesel exhaust, Penflex makes them all for industry. And Penflex ''Flexineering''—the science of applying flexible tubing to fit the particular needs of the job to be done—assures the right tube in each installation. When you require tubing or hose that is tight as a pipe, but flexible . . . safe at high temperatures . . . and free from metal fatigue, specify Penflex.

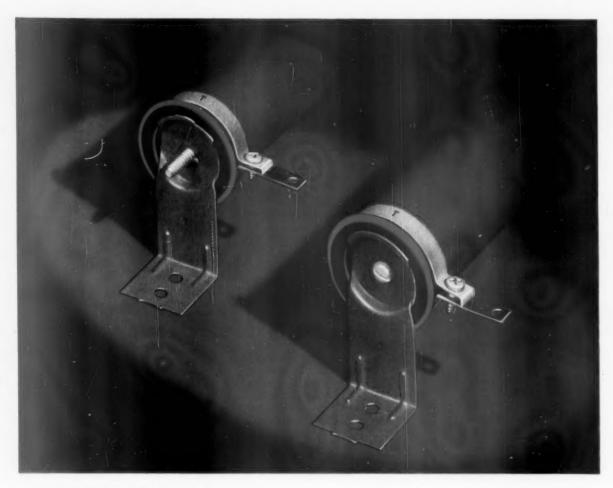
Penflex manufactures a complete line of four wall interlocked and seamless welded corrugated flexible tubing for industry. Write for your free copy of the booklet "Flexineering At Work."

Pennsylvania Flexible Metallic Tubing Company, Inc., 7218 Powers Lane, Phila. 42, Pa. Branch Sales Offices: Boston \* New York \* Chicago \* Houston \* Cleveland Los Angeles and Distributors in Principal Cities

> HEART OF INDUSTRYS LIFELINES

TWIN-LOK
Galvanized Lined
Stainless Steel Lined

METALLIC TUBING



Engineered by Tinnerman ...

## 4 SPEED NUTS® eliminate 8 parts in resistor assembly, cut costs 50%!

Tremendous assembly savings are often possible when Tinnerman Speed Nuts are "designed into" new products. This is an example: Corning Glass Works, Corning, New York, adopted 4 special Speed Nut brand fasteners and cut assembly costs on new power-type glass resistors by 50%!

Assembling power resistors is normally a slow and complex operation. Yet a pair of one-piece, spring-steel Speed Nutr angle brackets eliminated 4 of the 9 parts required by another fastening method and cut assembly time to a few seconds!

These corrosion-resistant, vibration-proof fasteners hold the resistor under live spring tension to avoid mechanical shock. Locating washers, lock washers and nuts are eliminated. Also, one-piece Speed Clamps\* that double as terminal bands eliminate 2 lock washers and 2 nuts.

Speed Nuts permit maximum assembly savings on *new* products, but you can probably make worthwhile savings *right now* on current products.

Over 8000 types available. See your Tinnerman representative or write for Bulletin 333-1.

TINNERMAN PRODUCTS, INC. BOX 6688 · DEPT. 12 · CLEVELAND 1, OHIO



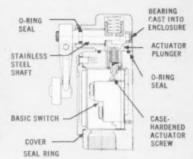
CAIALBA: Dominion Fasteners Ltd., Hamilton, Detario. GREAT BRITAIH: Simmonds Aurocassarios Ltd., Terforest, Wales. FRANCE: Simmonds S. A., 3 raw Salemon de Retisschild, Suresses (Seine). GERMANY: Mecans-Busdy GmbH, Heidelburg.

## MICRO SWITCH ... FIRST IN PRECISION SWITCHING



#### Seals Give Maximum Protection

Sealing is provided by use of O-ring seals on the actuator shaft and between the actuator head and the housing. A synthetic rubber ring seal is provided for the cover. These seals provide maximum protection against the entrance of dust, lint, oil and other liquids.



## Moving Parts Completely Sealed



All moving parts and the switching chamber are completely sealed — protected from wear or becoming fouled. Two-circuit double break contactarrangement allows flexibility in circuit design. Roller arm actuators are of forged aluminum alloy—give utmost resistance to shock and vibration.

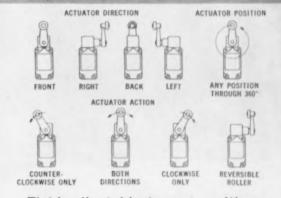
These MICRO SWITCH
"LS" precision limit
switches can be your
answer to
MORE PRODUCTIVE
operations

Easy to mount...easy to install...
reliable in operation...these
small, versatile, two-circuit
switches meet today's demand
for more automatic processes



Send for Catalog 83 for full information

Write for the name of the MICRO SWITCH distributor nearest you. Field engineering service is available at your nearby MICRO SWITCH Branch office.



#### Field adjustable to any position

The roller arm actuator is field adjustable through 360°, positively locking at any position. Actuators are assembled to operate in either direction or in one direction only, clockwise or counter-clockwise by removing the actuator head and rotating the notched plunger 90°. The head may be rotated to permit actuation from any of four quadrants.

#### SWITCH CHARACTERISTICS:

Operating force = 3 lbs. max.; Pretravel = 20° max.; Full overtravel force = 6 lbs. max.; Differential travel = 12° max.; Release force = ½ lb. min.; Overtravel = 30° min.

ELECTRICAL RATING: 10 amps, 120, 240, 480 v ac; ½ H.P. 120 v ac; 1 H.P. 240 v ac; .8 amp, 115 v dc; .4 amp, 230 v dc; .1 amp, 850 v dc. Pilot duty rating 600 v ac, max.

#### MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

In Canada, Leaside, Taronta 17, Onteria . FREEPORT, ILLINOIS





make
hose connections
faster
with

HATON-RELIANCE HÖZ-FAS-NERS

> gumanni galian gumanni galian

ŝ

Production and maintenance men acclaim Eaton-Reliance Hoz-Fas-Ners for speeding up operations, cutting costs. Usable on rubber, plastic or fabric hose, they're always on the job — exerting continuous, uniform pressure at all points.

On assembly line operations, savings in time and motion are substantial with Hoz-Fas-Ners, compared with other type hose clamps. On service . . . removal and replacement of hose is greatly simplified. Hoz-Fas-Ners never need adjustment or retightening — they are vibration-proof and don't work loose.

Hoz-Fas-Ners can be installed quicker than other type clamps... no screws to turn, no nuts to put on, no preassembling. Hoz-Fas-Ners are fabricated from the highest quality alloy spring steel, and resist rust — your assurance of long life. Because of the round contours of the sections, the clamps have no sharp edges to cut into hose. They are re-usable — for additional savings.

Write for free Engineering Bulletin No. 1.



ALL STANDARD

SIZES AVAILABLE

## EATON

RELIANCE DIVISION -

MANUFACTURING COMPANY
513 CHARLES AVENUE • MASSILLON, OHIO

SALES OFFICES. New York . Cleveland . Detroit . Chicago . St. Louis . San Francisco . Montreal

PRODUCTS: Sodium Cooled, Poppet, and Free Valves \* Tappets \* Hydraulic Valve Lifters \* Valve Seat Inserts \* Jet Engine Parts \* Rotor Pumps \* Motor Truck Axles \* Permanent Mold Gray Iron Castings \* Heater-Defroster Units \* Snap Rings Springtites \* Spring Washers \* Cold Drawn Steel \* Stampings \* Leaf and Coil Springs \* Dynamatic Drives, Brakes, Dynamometers



#### Now you can get highest capacity at lowest cost with Torrington Needle Rollers

A hardened shaft, a hardened housing, and precision Torrington Needle Rollers provide the most economical, highest capacity antifriction assembly you can obtain.

Six roller end shapes permit design flexibility whether the requirement be maximum effective roller length, proper fillet clearances or greater lip retainment. Torrington Needle Rollers are available in a complete line meeting SAE and AFBMA specifications. Torrington standards for material, heat treat, tolerance and finish of Needle Rollers are the highest in the industry.

Operating results with Needle Rollers depend on careful design of mating parts. Torrington's Engineering Department, with extensive experience in Needle Roller application, will be glad to give you technical advice on your needs. The Torrington Company, Torrington, Conn. - and South Bend 21, Ind.

#### TORRINGTON BEARINGS

District Offices and Distributors in Principal Cities of United States and Canada



Mounted without races between hard-ened shaft and hardened housing (RC-60 recommend-ed), Torrington Nee-die Rollers allow largest possible shaft diameters.



Carefully hardened, ground and lapped high carbon chrome steel makes each Torrington Needle Roller a precision part for long life performance.



Close tolerances are assured by stringent quality controls. Standard Ob tolerance is .002°, but Torrington Needle Rollers can be supplied with tolerance of .0005°. Tolerance on length depends on end shape.



Fine finish reduces friction to a minimum. Torrington Needle Rolfers are usually polished to 4-6 rms, but finishes as fine as 1-3 are available on special order.

NEEDLE - SPHERICAL ROLLER - TAPERED ROLLER - CYLINDRICAL ROLLER - BALL - NEEDLE ROLLERS - THRUST



Simplicity Model S-200 Asphalt Plant recently delivered to Ben M. Hogan & Company, Little Rock, Ark. This is Hogan's fourth Simplicity Plant, and is producing well over 100 tons of asphalt mix per hour.

#### "4 times around the world—that's how far we estimate a Standard Steel ring will travel as an integral part of a Simplicity Asphalt Plant"

"In 40 years of service we estimate that a bull gear and tire on the rotating dryer drum of a Simplicity Asphalt Plant travels at least 100,000 miles to make four million tons of asphalt without defecting. These and other components of our asphalt plants are forged by Standard Steel Works.

"But we are not only justly proud of the durability of our products, thanks in part to Standard, but also of the service we render our many customers-both in terms of delivery and of maintenance. And that's where Standard Steel Works is of greatest value to us. A special delivery arrangement with Standard Steel Works, plus their personalized service, helps us maintain superior service to our customers.'

Frankly, we feel we deserve this fine compliment from Mr. Whitfield. We know how important it is for our customers to keep their customers satisfied. That's why we take a special interest in their needs and keep letting our men in the shop know the importance of the role they play in helping our customers maintain a favorable competitive position.

Why not invite us to discuss your casting, forging and weldless ring needs with you. It won't cost you anything, and we can probably show you ways in which our service can save you money. Write Dept. 5-G.

"About five years ago we furnished a replacement 8 ft. x 15 ft. dryer drum to a customer whose dryer had been in service on a Simplicity Asphalt Plant for 25 years. The steel tires and bull gear of the old dryer showed no signs of wear and were used in the new drum. Those rings were supplied to us by Standard Steel Works. That's why we know the quality of Standard's rings is as good as the service they render us," says Harlan Whitfield, of The Simplicity System Company, Chattanooga, Tenn.

#### Standard Steel Works Division BALDWIN · LIMA · HAMILTON

BURNHAM, PENNSYLVANIA

Rings . Shafts . Car wheels . Gear blanks . Flanges . Special shapes





For SATISFYING Power Company and Application Requirements...

## BULLETIN **646**manual autotransformer Type

A strictly "modern" starter. Silver alloy, air break contacts provide long, trouble free life... without the messiness and maintenance of oil-immersed contacts. Operation is simple . . . a bell signals proper interval—which can be adjusted—for switchover from START to RUN. Air break contacts standard in ratings to 75 hp, 220 v; 150 hp, 440-550 v. Also furnished oil-immersed up to 125 hp, 220 v; 250 hp, 440-550 v.



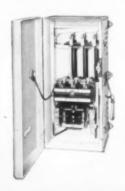
## BULLETIN **746**automatic autotransformer TYPE

Employs autotransformer connected in delta to reduce line voltage for starting squirrel cage motors that should not be started on full line voltage. Automatically operated by solenoid contactors with double break, silver alloy contacts. Adjustable timing relay controls accelerating period. Taps are provided on the autotransformer to adjust the motor starting voltage. Ratings up to 300 hp, 220 v; 600 hp, 440-550 v.



For Velvet S-M-O-O-T-H STARTING ... nothing equal on the market!

## BULLETIN **640**manual stepless resistance TYPE



Graphite compression disc resistors provide smooth, stepless starting of polyphase squirrel cage motors. Operated by hand lever, the smooth starting of the motor is under the control of the operator. Limits starting current and prevents lamp flicker. Accurate overload relays protect motors against burnout. No-voltage protection provided. Ratings to 200 hp, 220-440-550 v.

automatic stepless resistance TYPE



Preset and adjustable graphite disc resistors are automatically inserted in series with squirrel cage motor at starting. Adjustable timing relay operates contactor, which automatically cuts out resistors after predetermined starting period. Resistors can be adjusted to motor and load conditions for velvet smooth acceleration. Accurate thermal relays protect motors. Ratings to 200 hp, 220-440-550 x.

8-57-

Write for Bulletin



Allen-Bradley Co. 1316 S. Second St Milwaukee 4, Wis In Canada — Allen-Bradley Canada Ltd. Galt. Ont. ALLEN-BRADLEY

OTOR CONTROL

/see next

pages

# ...and still other ALLEN-BRADLEY reduced voltage starters

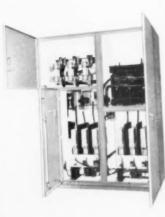
PART WINDING TYPE



For use with squirrel cage motors having two separate parallel stator windings. Provides economical reduced voltage starting when starting current does not exceed power company limitations, Two types Style A is a 2-step starter available in ratings up to 200 hp, 220 v; 400 hp, 440-550 v. Style B is a 3-step starter with resistance in series with the motor on the first step. In ratings up to 200 hp, 220-140-550 v.

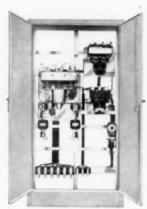
## high voltage, air break reactor TYPE

For starting high voltage squirrel cage motors at reduced voltage. Simple solenoid air break contactor has only one moving part, and the double break, silver alloy contacts need no maintenance. These contactors are designed for heavy duty industrial service and can be used for inching or jogging. Reliable overload relays protect the motor at all times. Starters have interrupting capacities of 150,000 kva. 2300 v; 250,000 kva, 4600 v. Made in ratings up to 1500 hp, 2300 v; 2500 hp, 4600 v.



## BULLETIN **741**...AUTOMATIC multipoint resistance Type

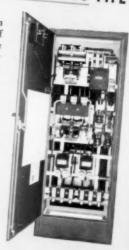
An automatic starter that will satisfy power company requirements for starting of motors on network systems. Resistances are automatically inserted in the line at starting, and are short circuited in steps at definite time intervals. Time intervals can be adjusted from 1 to 5 seconds for ideal starting under various load conditions. Available in 2, 3, and 4-point starters. Made in ratings up to 300 hp, 220 v; 600 hp, 440-550 v.





## BULLETIN **742**...AUTOMATIC stepless, graphite resistance Type

This is the ultimate in smooth acceleration of squirrel cage motors. The graphite disc resistors vary in resistance smoothly and steplessly as the pressure on them is automatically changed. Also, the rate at which pressure is applied can be varied over a wide range. Lamp flicker on network systems used for both power and light is completely eliminated. Also ideal where a starting shock to driven machines may cause serious trouble or affect machine life. Ratings to 200 hp, 220-440-550 v.





MOTOR CONTROL

Allen-Bradley Co.
1316 S. Second St., Milwaukee 4, Wis.
In Canada--Allen-Bradley Canada Ltd., Galt, Ont.



MR. ALEX PANCRAZI (left), Pisa Univ. (Italy) graduate, Chief Chemist, Eastern Wine Corp., Bronx, N.Y. (Right), Michael De Piano, N.Y. representative, Cooper Alloy Corp.

#### PANCRAZI OF CHATEAU MARTIN (Eastern Wine Corp.) tells why he specifies "Cooper Alloy Only" on stainless steel valves and fittings

Q. Mr. Pancrazi, why have you changed to stainless steel Q. Why is each of these features important? valves and fittings at Chateau Martin?

A. To assure product purity. Other metals can cause minute contamination reducing clarity and brightness; stainless steel does not.

Q. What valve model do you find most suitable?

A. After extensive testing, we picked a renewable-disc inside-screw globe valve—Cooper Alloy only.

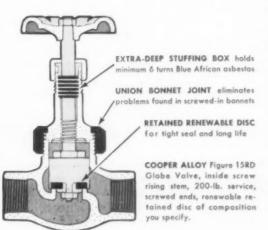
Q. Why "Cooper Alloy only"?

A. Because of three features I find combined nowhere else: renewable retained disc; union-bonnet construction; and extra-deep square-compression stuffing box.

A. Soft disc gives better seal; retention in metal jacket prolongs its life. When disc replacement is needed, union-type bonnet elin.inates difficulties normally found in screwed-in bonnets, removes another threaded joint from product contact. Extra-deep stuffing box with unique square compression reduces maintenance, gives tighter seal at stem.

Q. Don't any competitive valves possess these features?

A. Not one has them all. That's why, to maintain our product contamination-free and to reduce maintenance costs, we insist on "Cooper Alloy only."



YEARS AHEAD IN DESIGN SUPERIORITY! No matter what your valve type-globes, gates, angles, checks, or Y's-the Cooper Alloy model's outstanding design features will be important to you. Cooper Alloy, with 35 years of pioneering experience in stainless steel, does not merely adapt existing brass and iron valve patterns; it creates valves designed to be cast in stainless! Check the special design features of valve shown at left.

As the little CA man below is saying: "You Can Tell A Cooper Alloy Valve As Far As You Can See It!" Write today for your copy of our folder "Design Factors In Stainless Steel Valves." The Cooper Alloy distributor near you will be glad to show you the complete line of Cooper Alloy valves and fittings, and their advantages. He can serve you promptly from local stocks:



Corporation . Hillside, New Jersey VALVE & FITTING DIVISION

THIRTY-FIVE YEARS OF STAINLESS STEEL PIONEERING

ROSS

ENGINEERED ATMOSPHERES

FOR BETTER PROCESSING

Air Systems

BEING RIGHT

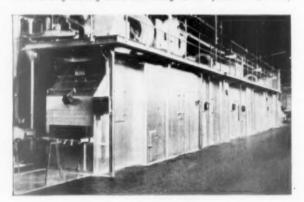
Bargain Price Tag!

Our business is designing systems and manufacturing units for drying, baking, curing, cooling, heating and other conditioning treatments where the operations are within an enclosure that must have just the right 'Atmospheric Condition'. In a very real sense, we are in the business of creating favorable atmospheres in which to carry on operations and to produce endproducts of the desired quality at the lowest possible cost.

The engineering just has to be right...right in both diagnosis and prognosis...right in evaluating and integrating all the variables that enter the processing steps involved...right in designing the necessary equipment and auxiliaries. Too much is at stake to risk anything less than what the best and most experienced engineering skills can bring to the problem. On this,

there can be no 'bargain' price tag.

When the time comes for you to consider your choice for designing and manufacturing the equipment to meet your conditioning requirements, may we suggest that you check up on the way Ross Engineers have served industry for some thirty-five years?



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BY ROSS ENGINEERS ARE...

CALIFORNIA PLANT ...

HIGH TEMPERATURE DRYING LINE AND COOLER FOR TREATING FIBRES

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CALIFORNIA PLANT ...

TOWER DRYER HANDLING VARIOUS FABRICS AND COATINGS,

JOINTLY WITH JOHN WALDRON CORPORATION

WISCONSIN PLANT ...

OVEN FOR FUSING ORGANOSOLS AND PLASTISOLS
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444 MADISON AVENUE, NEW YORK 22, N.Y.

ATLANTA . BOSTON . CHICAGO . DETROIT . LOS ANGELES . SEATTLE

# "IMPOSSIBLE" BRASS EXTRUSION SAVES '87,000 YEARLY!



Chase "Know-How"
cuts costs for Johnson Motors

(world's largest manufacturer of outboard motors)

The shift-rod connector on rugged, dependable Johnson Sea-horses had to be strong enough to hold up under severe stress and compact enough to operate in the clearances available on smallest engine models.

Stamped parts were completely unsatisfactory. Parts machined from rod were too bulky for versatile applications. So they checked with Chase to find out how closely a brass extrusion could approximate their requirements. And Chase "know-how" came through beyond their expectations!

Chase mill techniques proved to be so precise that the required extrusion needed no additional machining to cross-sectional dimensions! Result? An annual saving of approximately \$87,000 plus a much better design.



Bring your production problems to . .

.Chase

BRASS & COPPER CO.

WATERBURY 20, CONNECTICUT SUBSIDIARY OF KENNECOTT COPPER CORPORATION

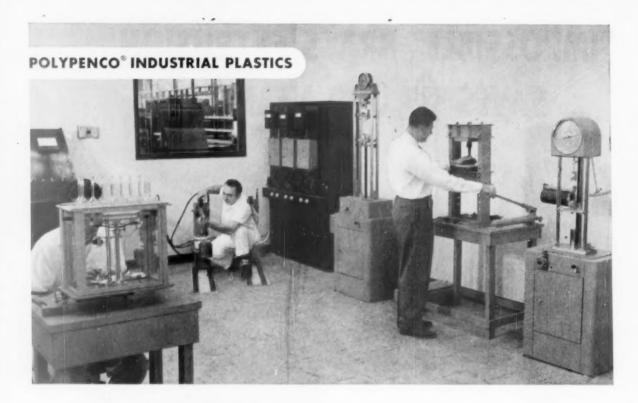
The Nation's Headquarters for Brass, Copper and Stainless Steel

Atlanta Baltimore Boston Charlotte Chicago Cincinnati Cleveland Dallas Denver Detroit Grand Rapids Houston Indianapolis Kansas City, Mo. Los Angeles Milwaukee Minneapolis Newark New Orleans New York (Maspeth, L. i.) Philadelphia Pittsburgh Providence Rochester St. Louis San Francisco Seattle Waterbury

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JULY, 1957

57



## The performance of your industrial plastics depends on quality

HERE is an industrial laboratory housing precision testing equipment—where Polypenco Industrial Plastics are checked through every phase of manufacture. This is why Polymer products never deviate from highest uniform quality...why Polymer has become established as a pioneer and producer of nationally distributed industrial plastics. Make certain of the performance of your products or processes by calling Polymer. Write for latest technical data or help on your applications for any of these Polypenco products or services.



#### NYLON & TEFLON®

These Polypenco Shapes are designed for rapid, low-cost fabrication on standard metalworking tools.

Polypenco Nylon; rod, strip, tubular bar, plate, tubing

Polypenco Teflon: rod, tubular bar, spaghetti tubing, large diameter thin wall tubing, sheet and slab

Polypenco Q-200.5 (cross-linked): rod and plate

Polypenco K-51 (chlorinated): rod, strip and tubular bar

Distributed by The Polymer Corp. of Penna,



#### NYLAFLOW® PRESSURE TUBING

A specially processed polyamide tubing, used extensively for hydraulic, lubricating, pneumatic, vacuum and processing lines in many industries. Available in burst pressures of 1000 psi and 2500 psi. Flexible, strong, corrosion resistant, easily installed. Distributed by The Polymer Corp. of Penna.





#### POWDERS FOR MOLDING AND PROCESSING

FERROMAGNETIC MATERIAL

A new powdered iron-filled plastic

material for electromagnetic design available in rigid cores and flexible

Distributed by The Polymer Corp. of Penna.

FERROTRON®

rod and tape.

Nylatron® nylon molding powders Nylasint® nylon powders for cold pressing and sintering

Whirlsint† powders for the Whirlclad Process

Distributed by National Polymer Products, Inc.

#### WHIRLCLADT COATING PROCESS

A new fluidized coating process using dry, finely divided powders for applying nylon, polyethylene and other coating materials to metals, ceramics, wood and other base materials.

Licensed by Polymer Processes, Inc.

The Polymer Corp. of Penna. National Polymer Products, Inc. Polymer Processes, Inc.

Subsidiaries of THE POLYMER CORPORATION Reading, Pa.

Export: Polypenco, Inc., Reading, Pa., U.S.A.

'Du Pont Trademark
Bulgary Trademark



For More Information Circle No. 197 on Inquiry Card—Page 17

For More Information Circle No. 198 on Inquiry Card—Page 17->
PURCHASING



CRINDING WHEELS

NEW

BOND ... for longer,

New IL Bond . . . it's in the grinding wheel mix. Special chemicals and compounds added to conventional resinoid bonds provide an internal lubricant to increase cutting action and prolong grinding wheel life. For ALL your snagging jobs!

NEW

Borolon ... abrasive for resinoid bonded snagging wheels

New DA Borolon . . . an improved, smaller crystal aluminum oxide abrasive for resinoid snagging wheels for floor stand and swing frame grinders . . . has more and sharper cutting edges, gives more production. Use with IL Bond described above.

SA Borolon

toolroom grinding wheels

New SA Borolon . . . a radically different, friable aluminum oxide abrasive with a unique single crystal formation that gives cooler, faster grinding and longer life. Ideal for tool and cutter grinding and horizontal surface grinding.

Send for descriptive catalog bulletins on these new products. Ask for IL, DA or SA bulletins.

NEW.

SIMONDS ABRASIVE COMPANY

Tacony & Fraley Sts., Philadelphia 37, Pa.

DIVISION OF SIMONDS SAW AND STEEL CO.

BRANCHES: PHILADELPHIA • CHICAGO • DETROIT • LOS ANGELES

SAN FRANCISCO • PORTLAND, ORE.





#### WALLACE BARNES STEEL DIVISION

ASSOCIATED SPRING CORPORATION BRISTOL, CONNECTICUT

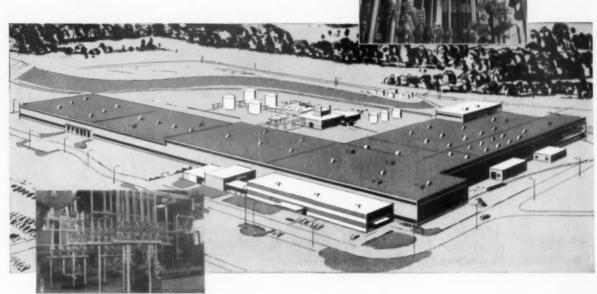
ALSO MAKERS OF SPRINGS . WIRE FORMS . SMALL STAMPINGS

## You see **OIC Valves** everywhere

STEAM

at the new General Electric Distribution Transformer Plant, Hickory, North Carolina.

OIL PROCESSING



TRANSFORMER OIL FILTRATION



PRE-HEATING FUEL OIL

The name General Electric is a promise of quality to users of complex electrical equipment. To help make good that promise, GE insists on this same high quality from its own suppliers. That's why you see OIC Valves of many types in nearly all valve installations in this new General Electric plant.

ARCHITECT-ENGINEER: Robert & Company Associates, Atlanta, Ga.

MECHANICAL CONTRACTOR: Hicks & Ingle Co., Charlotte, N. C.

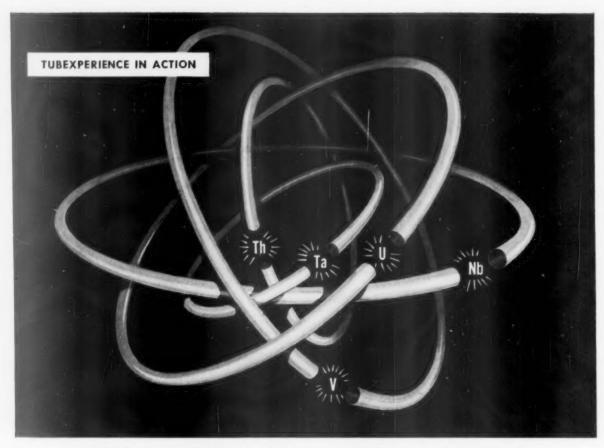
MATERIALS FURNISHED BY: Atlas Supply Company, Charlotte, N. C.

FORGED & CAST STEEL, BRONZE & IRON, LUBRICATED PLUG VALVES



-For More Information Circle No. 199 on Inquiry Card-Page 17 JULY, 1957

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### **NEED TUBING FOR ATOMIC POWER?**

#### Superior is your most reliable, experienced source

#### PROOF:

- Superior has supplied millions of feet of tubing for atomic applications to many of the key manufacturers in the atomic field.
- Superior has already successfully manufactured tubing from uranium, vanadium, niobium, tantalum and thorium.
- Superior has 9 years' experience in drawing tubing from titanium and titanium alloys.
- Superior was the first mill to produce tubing from Zirconium, Zircaloy-2, and Zircaloy-3.
- . . . And Superior has produced all this tubing to exceptionally precise specifications and tolerances!

Put Superior's experience and facilities to work for you! Superior has drawn most of the reactive metals, as well as stainless steels, nickel alloys, ingot iron, and Inconel, for important nuclear applications.

The end uses for Superior tubing in atomic energy include control rod tubing, fuel element tubing, tubing for moderator and shielding cans, process lines for handling radioactive liquids, and tubing for handling facilities.

**NOTE:** In some cases, tubing can be produced only with AEC release, because of priorities on materials.

If you are in or serving the atomic industry and need small tubing, this store of experience can be of great assistance to you. For information, write Superior Tube Company, 2034 Germantown Ave., Norristown, Pa.

**SEND FOR LATEST DATA ON ZIRCONIUM**—Write for your free copy of Special Analysis Memo 112—on zirconium, covering properties, fabrication and other data.

## Superior Tube

The big name in small tubing NORRISTOWN, PA.

All analyses .010 in. to 1/4 in. OD—certain analyses in light walls up to 21/2 in. OD

West Coast: Pacific Tube Co., 5710 Smithway St., Los Angeles 22, Calif. • RAymond 3-1331

For More Information Circle No. 201 on Inquiry Card-Page 17



#### BETTER DISTRIBUTION METHODS.



11:00 A.M. EST: Merchants' New York office receives local phone call from troubled purchasing agent. Can you help us? Our Chicago plant needs 5 drums trichlorethylene immediately.



11:06 A.M. EST: Message goes out by teletype to Merchants' Chicago office, where rush order and delivery instructions are relayed to adjoining warehouse.



10:20 A.M. CST: Five drums of trichlorethylene are loaded on small delivery truck.



10:45 A.M. CST: Shipment arrives at customer's plant, less than an hour after initial call.

## Ordered at 11:00 A.M. EST; Delivered at 10:45 A.M. CST MERCHANTS CHEMICAL BEATS THE CLOCK!

For thirty-five years Merchants Chemical has made a habit of special service and prompt service in the distribution of industrial chemicals. The list of products includes acids, alkalis, fungicides, surfactants, chlorinated solvents, emulsifiers, laundry compounds, soaps, dry ice and chemical specialties. In the instance outlined here, Merchants actually beat the clock in an effort to get material to a customer when and where he needed it. Close cooperation and an efficient communication system among the nationwide Merchants' offices made it possible. Wherever you locate, Merchants can serve you.



#### MERCHANTS CHEMICAL COMPANY, INC.

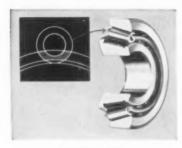
60 East 42nd Street, New York 17, N. Y.

SALES OFFICES AND WAREHOUSES: Chicago • Cincinnati • Calumbus • Denver • Lauisville • Milwaukee • Minneapolis • New York • Omaha STOCK POINTS: Albuquerque, N. M. • Erwin, Tenn. • 5. Norwalk, Conn.

For More Information Circle No. 203 on Inquiry Card-Page 17



#### Tomorrow's "dream" is our job today!



HIGHER FLANGE IMPROVES ROLLER ALIGNMENT

As shown by the gray area above, the higher flange provides a large two-zone contact area for the roller heads. This greatly reduces wear—practically eliminates "end play". Larger oil groove provides positive lubrication.

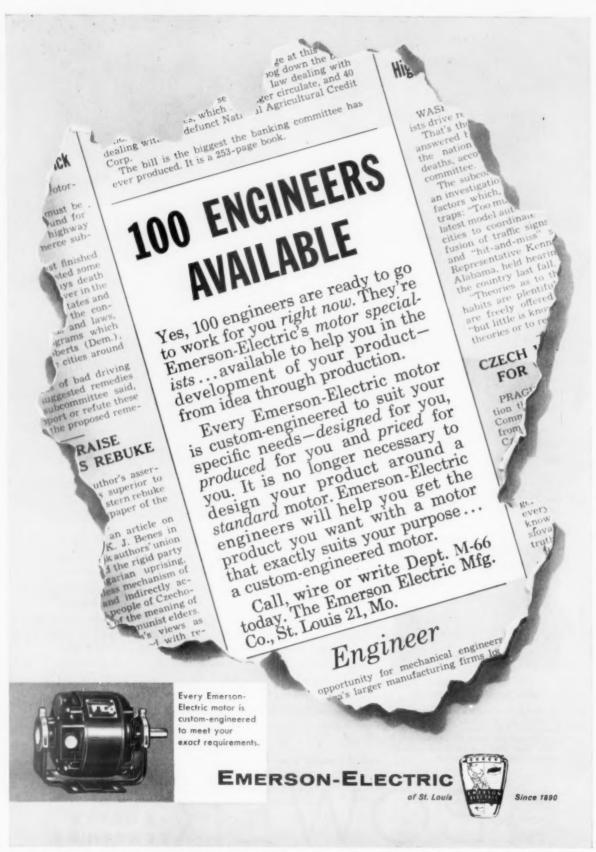
There's more to the car of tomorrow than just futuristic styling! Automotive engineers are working to perfect completely new power plants—like turbine engines—to achieve yet-unheard-of performance and economy! And they demand bearings that are as advanced as their thinking. This is no new challenge to Bower engineers. A glance at the design features listed at left will tell you a few of the many original Bower contributions to bearing performance which have reduced bearing maintenance and failure to a practical minimum. There are many more in the making. If your product is one which needs advanced bearings today plus realistic planning for the future, specify Bower. There's a complete line of tapered, straight and journal roller bearings for every field of transportation and industry.

BOWER ROLLER BEARING DIVISION FEDERAL-MOGUL-BOWER BEARINGS, INC. • DETROIT 14, MICHIGAN



BOWER ROLLER BEARINGS

For More Information Circle No. 204 on Inquiry Card-Page 17



#### IN TRANSPORTATION EQUIPMENT, TOO

haronsteel Quality

STANDS OUT

The quality standards and specifications of the transportation equipment manufacturers are known to be among the most exacting in American industry.

For this reason, many leading suppliers of automotive bus, truck and trailer chassies; railway cars, trucks, underframes and the exciting new air spring suspension (foreground) depend on Sharon Steel for high strength, low alloy strip and plate used in their products.

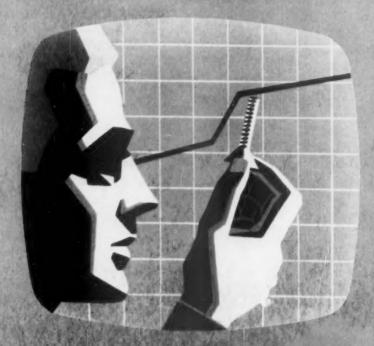
Other types of steel selected by the industry for their high quality are Sharon's line of stainless, coated and alloy strip and plate.

SHARONSTEEL

For 56 Years a Quality Name in Steel

SHARON STEEL CORPORATION, SHARON, PENNA.

#### This membership seal means



consistent good quality in PHILLIPS CROSS-RECESSED HEAD SCREWS

Manufacturers of Phillips Cross-Recessed Head Screws who are entitled to the above seal do a good deal more than compete in selling these famous fasteners. They share quality control methods that bring worthwhile advantages to your assembly operations.

Consistent good quality fasteners for your product from these reliable sources are assured by common adherence to precision accuracy of dimensional standards, inspection gauges and gauging methods established by the Phillips Cross-Recessed Head Standards Committee sponsored by Screw Research Association.

You can rely upon these sources for product reliability which assures correct mating fit between recess and driving point. This eliminates driver slippage and prolongs driver and bit life, improves product appearance and reduces your costs.



Members of Screw Research Association...

You can rely on these sources . . . for product reliability

American Screw Company • Atlantic Screw Works, Inc. • The Blake & Johnson Co. • Central Screw Company • Continental Screw Co. • Elco Tool and Screw Corporation • Great Lakes Screw Corp. • The H. M. Harper Company • The Lamson & Sessions Company • National Lock Company • The National Screw & Manufacturing Company • Parker Kalon Division, General American Transportation Corporation • Pheoli Manufacturing Co. • The Progressive Manufacturing Company Division, The Torrington Company • Scovill Manufacturing Company • Shakeproof Division Illinois Tool Works • The Southington Howe. Mfg. Company Sterling Bolt Company • Universal Screw Company • Wales-Beech Corporation

## EASIER TO INSTALL AND MAINTAIN!



mount l device instead of 2

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all components accessible from front

plenty of knockouts

### SQUARE D COMBINATION STARTERS

(Switch or Circuit Breaker Types)

Save space and time. Mount and wire one device instead of two...

neater, more attractive installations.

Write for Bulletins 8538 and 8539
Square D Company, 4041 N. Richards Street, Milwaukee 12, Wisconsin

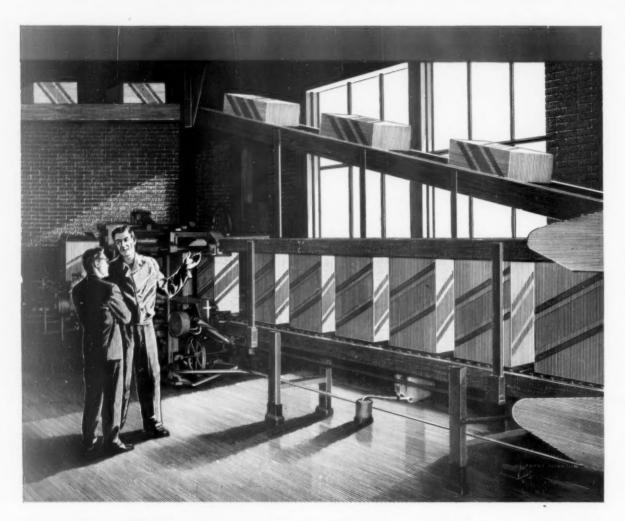


NOW...EC&M PRODUCTS ARE A PART OF THE SQUARE D LINE !

SQUARE D COMPANY

←For More Information Circle No. 207 on Inquiry Card—Page 17 JULY, 1957

For More Information Circle No. 208 on Inquiry Card-Page 17



#### PACKAGING PLANNED FOR AUTOMATION



A single "off-size" box can halt your automated production line. Stay in the clear with Gaylord boxes. Precision-made of quality materials—they're your best choice for smooth, uninterrupted package flow.

Whether your operations are fully or semi-automated, Gaylord boxes help keep you profitably on the move. Contact your nearby Gaylord packaging engineer.

CORRUGATED AND SOLID FIBRE BOXES . FOLDING CARTONS . KRAFT PAPER AND SPECIALTIES . KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION \* ST. LOUIS

DIVISION OF CROWN ZELLERBACH CORPORATION

## Purchasing Policies Are Holding the Line

THE LAW OF SUPPLY AND DEMAND is not a simple two-way ratio as the phrase might indicate. It deals with a three-way balance in which the supply-demand relationship is reflected in a third variable—price. When you bear this in mind, it goes far in explaining some apparent inconsistencies in the reports on the current business outlook and purchasing policies, as presented at the N.A.P.A. convention in Atlantic City.

The general opinion is that demand and output will continue high for the balance of the year. In the oversimplified version of economic law, this would be the signal for active industrial buying and rising prices. Instead, the pressure is for lower inventories and short-term commitments, 30 to 60 days. The upward surge of prices has been halted, at least temporarily, despite rising costs of production.

Explanation for this lies in the fact that demand, while healthy at the present price level, has reached a stage of strong resistance to further price advances. Here is the essential, and delicate, point of balance.

Meanwhile, supply is ample in most commodities and competition among suppliers is such that, to win and hold the desired share of existing demand, cost increases must be absorbed on the supply side instead of the easy, traditional policy of passing them on to the buyer.

Current purchasing policies are testing how far this is feasible in a going economy. They indicate confidence that competition is strong enough to maintain ample supply at or near present prices, without buying to anticipate—and invite—further advances.

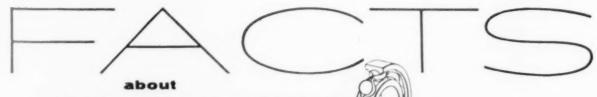
The situation emphasizes two basic things about the purchasing function and responsibility:

1. Purchasing policies, taking due notice of competition, can be an effective means of checking the inflationary forces that pose a constant threat in our free-and-easy, prosperous business economy. This is a service of first importance to the nation's economy in the larger view.

2. Again taking notice of competition, in his own company's position as a seller, the purchasing agent can make a constructive contribution through the constant search for better value—the one remaining avenue to lower costs. This is the alert buyer's greatest service to the individual company. It implements the first objective.

Thus purchasing, in broad perspective and in the detail of day-to-day buying, holds the key to the course of business in the critical months ahead. The proceedings at Atlantic City give heartening evidence that purchasing men recognize their responsibility and are doing their job.

Stuart F. Hemrity



NEW DEPARTURE

BALL BEARINGS

## NEW DEPARTURE IN PILLOW BLOCKS

- Clean, rigid, compact design.
- Free of any lubricating fixtures.
- New Departure ball bearings sealed and lubricated-for-life.
- Pillow Blocks easily mounted without special tools.
- Only high capacity precision ball bearings used.
- · Accommodates any misalignment.
- 31 shaft sizes, 1/2" through 27/16".
- Interchangeable with most makes.

Send for Catalog PBC

for complete details.

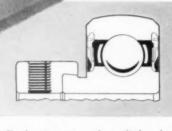
GREASE SEALED IN
DIRT SEALED OUT

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FAMOUS SENTER

ON GUARD

New Departure Pillow Blocks emplay the performance-proved New Departure Type AE Adapter ball bearings with spherical O.D. for alignability and steel-reinforced Sentri-Seals for long life protection against dirt or grease leakage.



The bearings are easily applied to the shafting and are positively locked in position with an eccentric cam locking collar and set screw.

BALL BEARINGS MAKE GOOD PRODUCTS BETTER

NEW DEPARTURE . DIVISION OF GENERAL MOTORS . BRISTOL, CONN.

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PURCHASING

JULY, 1957

**PURCHASING** 

# highlights



Play on Memorial Day and thereafter, the general chairman warned, because this convention is a time for work. But from all appearances, delegates to N.A.P.A.'s 42nd unnual convention and Inform-A-Show were able to do both—and do them well. Between the excellent

business sessions, visiting purchasing people from all over the country got their delightful fill of the board-walk, the beach, the salt water taffy, and all the many other attractions of fabled Atlantic City. This entire issue is devoted to a report on all aspects of the highly successful convention.

Leading off the issue—as it led off the first business session—is outgoing President Staff Kellam's message on "The Professional Chollenge of Purchasing." The talk is full of stimulating thoughts for any purchasing man who takes seriously his obligations to his company and to his country. It begins on page 78.

Speaking of challenges, each new executive committee of N.A.P.A. faces a tough one in meeting the performance of the previous group. The new team that is to guide the Association's destinies for 1957-58 is made up of a particularly fine, forward-looking group of outstanding purchasing personalities. Meet them on page 83.

One of the most effective tools for stimulating creative thinking about purchasing—or anything else, for that matter—is the case history. The method was demonstrated practically at the convention session on "Good Buys I Have Made." Read these factual accounts of impressive and profitable purchases, beginning on page 84.

You'd guess that a government purchasing agency would not have much of a chance against big corporations in the competition for today's college graduates. But the County of Los Angeles has proved that a civil service career in buying—intelligently and attractively presented—can interest topflight graduates. The basis of the County's aggressive recruiting program is the excellent training and job opportunities offered. The story, told at the Govern. .ntal, Educational and Institutional Buyers Group meeting, appears on page 96.



Purchasing needs greater recognition from management. That theme is, and should be, dominant at N.A.P.A. conventions. But sometimes it sounds a little hollow, when P.A.'s repeat it to themselves and nobody else. Purchasing Magazine thought this convention

period was a strategic time to stress the demand—and back it up with solid evidence. So it took a full-page in the New York Herald-Tribune to tell industry and the world at large that Purchosing and Profits are Two Sides of the Same Coin. The "witnesses": six top industrialists, who told just how important good purchasing is to their operations. Read how this important message was publicized on page 98.

Economic news free of platitudes and propaganda is hard to come by these days. We think about the most objective dope you can get on which way the economy is heading is that produced or used by purchasing agents. There are stimulating doses of both in a special section devoted to convention talks on the business and commodity outlook, beginning on page 111.

There's a wealth of information for purchasing men in these regular monthly departments: the Washington Report (page 13), New Catalog listings (page 17), New Equipment and Products (page 142), News of Your Suppliers (page 22), Association Activities (page 196), and Men in Purchasing (page 222).

next month:

Standardization of Supplies—Mechanized Purchasing System— Lease or Buy Equipment?



## What's the <u>lowest cost way</u> to produce steel parts like these?

You may be paying considerably more than you need to for parts like these if you aren't taking advantage of Ryerson flame-cutting service.

Size makes no difference—nor intricacy of shape. You can order one part or one thousand and get quick delivery of steel cut to close tolerance—with almost die-cut accuracy from piece to piece. And here's where the saving comes in:

- No dies or molds are needed so you save this cost when you switch from cast or forged parts to flame-cut parts.
- Less machining is usually required to finish a flame-cut part. Sometimes machining is eliminated altogether.
- Freight costs lower—If you're now paying freight on steel you later scrap you may well be able to pay for flame cutting with the money you save by shipping lighter

flame-cut parts. The blank for a 6" disc is 49% heavier than the disc itself. Storage and handling expenses are reduced, too.

- Less time in process—You can often convert finished products into cash more quickly because parts can be produced faster by flame cutting.
- 5. No loss on spoilage or rejects—They're our problem—not yours.
- Design changes are simpler and can be made more frequently without sacrificing manufacturing economy.

You draw on the nation's largest steel stocks at Ryerson—and unequalled flame-cutting facilities are ready to work for you. A blue print or sketch with clearly marked dimensions is all we need for prompt handling of your requirements. Call your nearby Ryerson plant for cost-cutting flame-cut steel today.

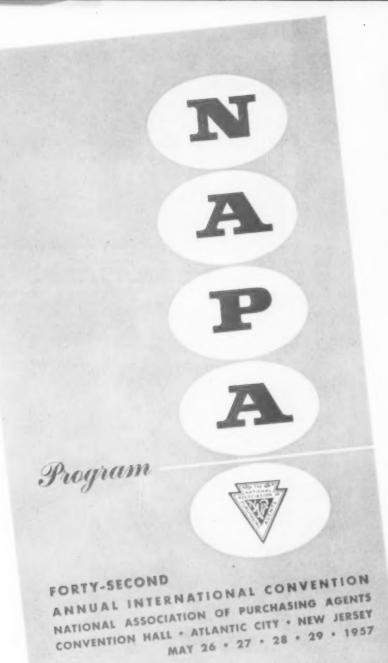
In stock: Carbon, alloy and stainless steel - bars, structurals, plates, sheets and strip, tubing, re-bars - industrial plastics, machinery & tools, etc.



#### RYERSON STEEL

JOSEPH T. RYERSON & SON, INC. PLANTS AT NEW YORK . BOSTON . WALLINGFORD, CONN. . PHILADELPHIA . CHARLOTTE . CINCINNATI
CLEVELAND . DETROIT . PITTSBURGH . BUFFALO . CHICAGO . MILWAUKEE . ST., LOUIS . LOS ANGELES . SAN FRANCISCO . SPOKANE . SEATTLE

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"Field Marshal" Jim Burke, general program chairman, checks a final detail with one of his top lieutenants just before calling the convention to order.



H. L. Consley, program chairman, outlines the convention theme and program highlights at the opening session in Convention Hall.

General view of Convention Hall on Monday morning.

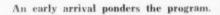






Who's here and where? Once again PUR-CHASING's directory board gave all the answers on convention registrants.

The shops, the sunshine and the sea air couldn't keep the purchasing agents from their appointment—the first convention session on Monday morning.





As the meeting starts-satisfaction, contemplation, anticipation, jubilation.



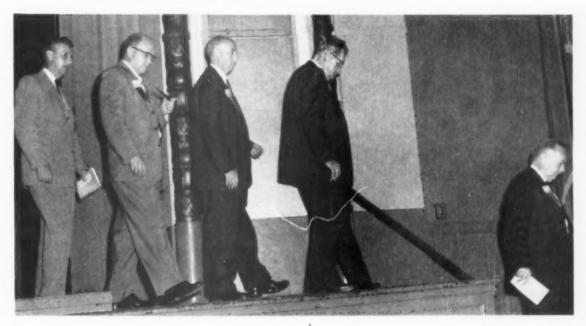


#### **Annual Convention Report**



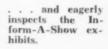
Show me.

Making way for the new team, outgoing vice-presidents (l. to r.) Thor Laugesen, Tom English, Jack Holt, Jess Pate and Milton Staley leave the platform.





The crowd pours down from the main ballroom . . .







#### **Annual Convention Report**

## The Professional Challenge of Purchasing

Are we up to it? Purchasing agents soberly ponder the future challenges of purchasing as spelled out by retiring N.A.P.A. President Staff Kellam.

By H. Stafford Kellam, Purchasing Agent, Circuit Protective Devices Dept., General Electric Co.

THE AMERICAN economy has arrived at a fresh starting point. The only thing that can trip us, make us stumble, is inflation. The attempt to reduce costs and rack up purchase savings is regarded by many of us as just doing our job. But the cumulative efforts of hundreds of thousands of purchasing agents and buyers doing this job is one of the best ways I know to curb the dangerous threat of inflation.

Progress in our economy will open up many new and challenging avenues of advance. And I believe that the purchasing profession has the necessary qualifications to lead the way along the avenues of economic advancement.

Many of these new advances will be in the traditional area of economic performance, that is, the procurement of materials in order that the purchasing agent's company may make and sell goods and services at a profit. But the man who confines his efforts to these relatively familiar parts of his assignment is not

recognizing newer, and perhaps more challenging, parts of his total responsibility. Beyond the traditional assignment, the buying of materials, lies a whole spectrum of political and social responsibilities that are urgently clamoring for attention.

#### **Early Recognition**

The purchasing agents' contribution to the national economy had early recognition. To cite an example, the theme of the 1918 convention and the title of the speech given by C. A. Woodruff was "How the Purchasing Agent May Serve the Nation in His Work." He said that "the P.A. was the logical man of a concern to assist the company with expert advice on how to supply labor and material; and the man to carry the message of free economic intercourse between business interests; the man, by friendly advice and active service, sounds the note of conservation and co-operation which makes the harmony so necessary in active business.

At the same convention, it was also suggested that the association adopt a code of ethics. The purpose would be to raise the standards of the profession and help the members to sell it to their management and obtain their approval. As you all know, the code is based on three simple statements:

- 1. Loyalty to his company.
- 2. Justice to those with whom he deals.
  - 3. Faith in his profession.

As everyone knows, the social and political responsibilities of a manager are becoming increasingly important. Every major management decision within a company has parallel effects. It creates changes within the company's operations, and it creates changes in the relationships and attitudes of the outside publicsome of these can be quite vocal. Before discussing the management responsibilities that are affected by the purchasing agents' procurement operations, let's take a look at purchasing today and the state of the economy.

It is just as natural as breathing that whenever you get a group of purchasing agents together, they ask one another, "How's business?" In my travels in this past year, I had the opportunity to learn how business was, not only in my own area of Connecticut, but throughout the land.

#### Economic Appraisal

Lack of skilled labor, shortages of finished goods, high inventories, lack of ready cash, cutback in work force, strikes in suppliers' plants, defense orders, priority ratings, sales slumping, sales rising, prices up, prices down, are we going to have a slump—these are some of the problems that are common to all of us, varying in intensity in different parts of the country.

From the development of the past few months or so, it has become apparent to all of us that the rate of advance in economic activity has slowed down. Although some of the steam is out of the boom in capital spending, there is still a lot of underlying strength in the form of consumer spending and government purchases.

The output of durable goods has declined slightly due to lower demand in consumer durables, which, of course, affects the primary metals and lumber industries. As the year progresses, I

expect that consumer durables production will shift into a rising trend as manufacturers' inventories are worked off and the consumers get into a buying mood again. Nondurable goods will experience the same thing. Producers' goods production, I think, will go down, but nothing drastic.

All in all, I think that 1957 will go down as a year of rolling adjustment; weakness in some sectors will be offset by strength in others. The net effect will be a fairly stable level of economic activity.

There has been a lot of talk on the subject concerning the ways a purchasing agent can hold down costs, help check inflation. The validity of this statement had never been so forcefully driven home until I started touring the country. Everywhere I went, the same story was told: "Business is good, but it becomes more and more apparent that costs must be cut-both operating costs and in raw and component materials, in order to stay competitive." And usually in the next breath, men would tell how they have brought about cost savings in their own company by switching to standards or finding a new material that worked just as well and at a lower price than the old material.

It has been said before, but a good thing can always be re-

peated without losing its essential value. A purchase savings is a direct profit—a purchasing loss is a direct loss. In that wellknown book of Stu Heinritz's, that statement is made that a savings of ten or fifteen per cent in purchasing is the profit equivalent to doubled sales volume for some companies. This concept of purchase savings is beginning to catch on; it still has a long way to go, for we are just like a pick and shovel prospector scratching on the surface on what really is a gold mine in the form of lower material costs. Techniques of value analysis, negotiated buying, mechanization of the incoming material function, improved production scheduling and inventory control are just a few of the tools that we must use to develop the gold mine of lower material costs.

#### Sell Management

Management must be sold on the fact that purchasing is a profit-making part of the company. If sales underbids a job and loses money, it is out of profits; and by the same token, if purchasing buys poorly, paying a higher price than it should or buying inferior material, the transaction results in a loss—it is out of profits.

Mechanization and automation are used by many of our com-



panies to increase production and to obtain a firmer grip in trying to shinny up the greased pole of competition. In spite of all the articles we read on automated factories that are in production, these factories only comprise a small percentage of the nation's producing facilities. But you can bet your bottom dollar that the percentage is going to grow. To make mechanization and automation pay off, the usual peaks and valleys of the traditional production cycle must be leveled out. Inventories will have to be kept lean and flexible, not allowed to become excessive or below set minimums because this condition can be economically dangerous. It also means that deliveries of needed materials and supplies be timed to arrive on a daily or perhaps an hourly basis to keep the automated production lines moving.

In our competitive system, every company tries ingeniously to keep its personnel, products, processes, facilities, methods, and ideas ahead of competitors.

Yet I wonder, in all this turmoil of innovation and change, if we purchasing agents sometimes have the foolish idea that we personally stand apart, unchanging, exempt from obsolescence. To my dismay, I met a few men who seemed to think that membership in the association kept them from being classified as obsolete.

Let us have the humility and the frankness to admit that purchasing attitudes and skills, like any others, are subject to be rapidly outmoded in this age of change. The purchasing agent who does not keep up with the times—or rather, keeps up with the future—is going to find himself as out-of-date as yesterday's newspaper, and almost as quickly.

#### Continue Learning

Consider how, in our lifetime, the demands on business have changed, and how purchasing agents have changed to meet their new responsibilities.

There apparently was a time in the beginning of the industrial era when ambition, vision, and a certain ruthless determination were the primary requirements for success.

There was a time when, in most companies, the "Purchasing Agent" was a man contemptuous of learning. Today, business and education cooperate to prepare men for business leadership, and purchasing positions are increasingly held by educated persons. By this, I do not necessarily mean persons who attended college, but persons who keep learning as long as they live.

#### Plan Ahead

There was a time when business operations were run on almost a day-to-day basis. Today, a purchasing agent must anticipate the future and plan ahead—preferably five to ten years ahead—if he is to help his company to remain competitive.

There was a time when the purchasing agent felt that if the production people were happy—

as much as they can be—and his suppliers were not being taken over by his company's competitors, he was satisfying his purchasing responsibilities. Today, an alert purchasing agent knows that continuing usefulness and purchasing profitability depend on a much wider range of relationships, involving not only salesmen and other company personnel, but other businesses, other institutions, and society as a whole.

I cannot stress too strongly the fact that all of us should take full advantage of the training courses given by our local purchasing associations, local universities and colleges, and our company training courses to fill our gaps on basic business and industrial functions. I can say that I am quite pleased with the quality and active participation in the educational courses put on by the local associations. There has been some

(Please turn to page 310)

#### Purchasing's Highest Award Goes to Graham

This year's Shipman Medalist is Harry Graham. The New England Association's soft-spoken, gentlemanly secretary was honored with purchasing's highest award for continuous distinguished and meritorious service in the advancement of the profession.

Harry joined the New England Association in 1921, after 15 years with the purchasing division of the New York, New Haven and Hartford Railroad. He was the first full-time secretary of the group, which was the first purchasing association in the U.S. He became editor of the association's magazine—The New England Purchaser—a short time after.

In his 37 years in both posts (Harry's retirement has just been announced) he earned a solid reputation for personal and professional integrity. In back of it was a fierce pride in the purchasing profession and a determination to fight with it and for it until it reached its rightful place in in-



W. R. Murray, chairman of the Shipman Medal Award committee, presenting the gold medal to Harry J. Graham at the annual N.A.P.A. banquet.

dustry. In deed and written word he always aimed at that goal. The J. Shipman Gold Medal Award founded in 1930 by the Purchasing Agents Association of New York—is the profession's tribute to one of its most eminent members.

#### **Annual Convention Report**





A busy moment in the "nerve center"—N.A.P.A. headquarters. Miss Farkas checks with Assistant Secretary Frank Winters, center, on an urgent call. Secretary Howard Ahl is at the desk, while President Kellam stands by.



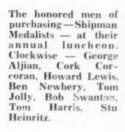
Helpful, efficient service in the press room—Frank Brodhead (l.), of the Philadelphia Purchasor, assists Dick Brown, editor of the Southwestern Purchaser.



George Aljian reports on the activities of the Organization Planning Committee.



A quick pass at a crossword puzzle between sessions.







"Harry said he'd be here . . . "



Purchasing Editors Stu Heinritz and Dean Ammer with former President Chris Christensen.



Carl Ilgenfritz (L), U.S. Steel, and Andy Kennedy, Westinghouse, lead the crowd out of the first general session.



Former President Hack Jones

Mrs. Jess Pate (1.), wife of the outgoing vice-president of District 2, and the new first lady of the association, Mrs. Robert Shillady.



82

## New Leadership for N.A.P.A.



New helmsmen for N.A.P.A., Executive Secretary - Treasurer Howard Ahl (l.), and President Bob Shillady, with outgoing President Staff Kellam (r.)

R obert E. "Bob" Shillady, is the new president of the National Association of Purchasing Agents for the 1957-58 term. Mr. Shillady is general agent of New England Electric System Companies, Boston.

A graduate of Harvard, Mr. Shillady entered purchasing in 1920, with the New England Power Co.—and has remained with it. He has been a member of the New England Purchasing Agents Association for many years, serving as its president in 1954-55. He has been a national director, vice-president, and financial officer of the N.A.P.A.

Chosen to serve with him on the Executive Committee are the following vice-presidents (reading from left to right, seated row first, in photo below):

District 1— Gordon Burt Affleck, The Church of Jesus Christ of Latterday Saints, Salt Lake City, Utah;

Past President—H. Stafford Kellam, General Electric Co., Circuit Protective Devices Department, Plainville, Conn.;

New President—Mr. Shillady;

District 2— Richard C. Fast, Pan American Petroleum Co., Fort Worth, Texas;

District 3— Thomas G. Paterson, Jr., The Gates Rubber Co., Denver, Colo.;

District 4— Leonard Butters, Union Steel Products Company, Albion, Mich.;

District 5— Robert Wier III, Hercules Powder Co., Inc., Wilmington, Del.;

District 6— Lyle E. Treadway, The Federal Glass Co., Columbus, Ohio;

District 7— C. C. Sisk, American Zinc Company of Tennessee, Mascot, Tenn.;

District 8— John F. Snedeker, Binney & Smith, Inc., New York, N.Y.;

District 9— Thomas W. Seavor, Speidel Corporation, Providence, R.I.





#### **Annual Convention Report**

## A GOOD BUY I Have Made

Nine veteran P.A.'s describe one of the many instances in which they saved their companies money

#### **Synthetic Lubricants**

G. E. Brooke, E. I. du Pont de Nemours & Co., Orange, Texas.

We had the problem of maintaining a continuous and dependable supply of synthetic lubricant, while trying to reduce cost. We were using glycerine, which was readily available as a by-product of the soap manufacturers until the demand for various grades of soap products began to seriously affect the availability of this material. The result was that we faced a situation where glycerine was either on a "strict allocation" basis or the supply was plentiful. This situation also affected the price, which varied from 28¢ to 60¢ per pound.

A search was begun to locate alternate materials which could be obtained from dependable sources. "Ucon" products we will refer to as "A" and "B" were tested and proved satisfactory.

Later, a mineral oil satisfactorily replaced the "Ucon" "B" at a price reduction of \$1.60 per gallon. This resulted in annual savings of \$6,000.

About this time, synthetic glycerine became readily available. The market price leveled to a point slightly below the cost of the Ucons and we again began to use the glycerine exclusively at a very small price saving.

We again approached Ucon manufacturers concerning the possibility of producing a different grade of Ucon which would meet our requirements, yet be available at a lower cost. As a result of working together on this problem, several experimental grades of Ucon were produced and tested. Grade "C" proved to be satisfactory both from a performance and cost standpoint.

Should this material continue its good performance, which we are confident it will, a yearly savings of over \$21,000 will be realized.

#### **Technical Help Pays Off**

M. B. Eubanks, Jr., Riegel Textile Corp., Trion Div., Trion, Georgia.

In 1948 my work was expanded to include one of our largest textile divisions. At that particular time this division was experiencing a bad situation in their sizing operation. Sizing operations apply certain starches, gums, tallows, etc., to warp yarn to give them added strength for weaving and subsequent operations.

In studying this problem two factors stood out:
(1) All of the raw materials, mainly starches, were purchased from one concern (2) We were experimenting with several good sources of tallow and oils, excluding one with whom for some reason or other we were very mad at the time.

As time moved on we were able to get the operating heads to agree to divide the starch business, and things began to change. Now we did not save any money on the cost of starch, but we did have access to the technical knowledge and technical services from five different sources instead of one and through the cooperation of these men with our own engineers and research and development people, new and better methods

were devised and plant efficiency improved. These efficiencies have saved thousands of dollars annually and will continue to do so.

Through the aid of our vendor technical staffs we were able to engineer bulk handling equipment for starch that was applicable to our particular operations. This equipment has given us additional thousands of dollars in savings through direct material costs.

#### Specifications, Not Brand Names

W. C. Kendrick, H. P. Hood & Sons, Inc., Boston Our company operates a fleet of approximately 2500 trucks. Our requirements of antifreeze for this fleet average about 13,000 gallons per year. Up to five years ago, at the direction of our Vehicle Division, we purchased a particular standard brand antifreeze at the wholesale price.

In 1952 the buyer pointed out to the Vehicle Division that we could purchase this product to specification and in the competitive market at a lower price. The Vehicle Division was hesitant to allow purchasing to do this because of the opinion that the risk was too great if quality should be unsatisfactory. However, after we secured a letter from the producer of the standard brand antifreeze stating that the unbranded product he would supply would be the same specification as the branded product, we were successful in securing their approval to purchase this product. We thereupon made this purchase at a saving of 10¢ per gallon or \$1300.

The saving in 1952 can be credited solely to purchasing unbranded or specification product rather than branded product, but from 1953 to 1956 inclusive the technique of competitive bidding must be credited with the major share of the savings.

In 1953, the invitations to bid uncovered a distressed lot of specification products at a price below the competitive market.

It is of interest to note that in 1955, although the wholesale branded product price advanced 9¢, the competitive specification product price advance was limited to 7.3¢.

The total saving of approximately \$25,000 for the five year period was accomplished without any decrease in product performance or quality.

#### Good Bag Buying

E. M. Krech, J. M. Huber Corporation, New York
Ten years ago we used a sewn valve bag made
from three 40 pound sheets of natural kraft. It
was printed one side, one color.

Our first good buy involved changing from a sewn valve to a pasted valve bag. The saving amounted to approximately nine per cent. We also had a bag which shaped and stacked better.

Our second good buy involved a change in con-



G. L. Haszard, general purchasing agent British Columbia Electric Company Ltd., presided at the Tuesday afternoon session.

struction from three 40 pound sheets to a twoply bag with a 60 pound outer sheet and 50 pound inner sheet with a corresponding reduction of ten pounds in basis weight. This resulted in a bag equally strong and having an outer sheet which resisted scuffing far more efficiently than the lighter 40 pound sheet. The saving here amounted to approximately seven per cent.

Our third good buy involved a reduction in tube length without decreasing the finished bag length. This was accomplished by reducing the paste lap at the top and bottom of the bag. The full reduction was handled in two stages of ½" each. The paste lap was reduced from 2-½" to 2-½" and again from 2-½" to 2". These savings amounted to approximately three per cent.

Our final good buy involved printing. By limiting our requirements to identification only, we saved approximately six per cent. With our product, detailed printing offered no advantage since such printing would be seen only by warehouse and plant labor.

#### **Check All Sources**

A. J. Melka, Hydraulic Dredging Co., Ltd., Oakland, Calif.

As dredging contractors we use quite a bit of large steel pipe, and it is in the buying of pipe that I wish to relate an experience that took place before Pearl Harbor to aid us in submitting a low bid for a government contract. The fabrication of our 30" diameter pipe is a specialty item that all fabricating shops cannot handle, which makes it difficult to get sufficient bidding for the work. At that time, we were receiving bids from companies in our own locality, not knowing any other reliable sources. However, after joining the Northern California Association, we were able to put in operation what the education committee suggested; that of checking the sources of supply and with the help of the association, by finding



T. A. Corcoran, director of purchases, The Courier-Journal, moderated the program and explained the ground rules which limited each speaker to a maximum of five minutes time.

out about other sources up and down the coast.

One source was 500 miles south, and another 750 miles north. At the next opportunity that came up for bid, these new sources were asked to bid along with our local sources. The source up north did not bid, but the one in the south beat our home town bid by 25%.

In fact, the bid was so low as to make one wonder what was left out of the quotation. Was the welding and workmanship going to be as good as the usual fabrication; was the work going to be as good as usual? It was a problem, wondering whether the saving of bid dollars would compensate for the extra work that might have to be done on the pipe by our field forces because of poor welding.

We (including our engineers) met with the lowbidders and found that they had excellent facilities, engineering and know-how, and understood our design, so that the award was made on their bid. This bid enabled our company to be the low bidder on a very sizable contract. It was not just the saving on this particular job that pleased our company, but that it opened up a new source that we have continued to do business with in the last eighteen years.

#### Substitute Materials

H. R. Michel, Celanese Corporation of America, Charlotte, N. C.

Along the lines of the best buy we ever made at Celanese, a substitution of materials involving change of specifications was just recently completed at our Bishop, Texas, plant.

Engineering passed down a request for a substantial quantity of 42" and 48" O.D. carbon steel pipe. Investigation by our purchasing department revealed that the pipe was to be incorporated into the atmospheric pressure air suction header for a series of compressors supplying a large oxygen unit under construction. The pipe would be exposed to normal atmospheric corrosion.

The wall thickness of the pipe was specified as 1/4" in order to offer sufficient rigidity so that the pipe would be largely self-supporting without having to cradle the header by some complex and costly arrangement of tiers.

Quotations received indicated costs for the header in the area of \$9,000 to \$10,000 and delivery of the pipe was far from satisfactory for the project scheduling.

One night on his way to the plant parking space our P.A. noticed some sheet metal culvert material on the job site being used in connection with the road construction and grading program. The next morning he called in the manufacturer of this material and together they discussed the feasibility of using it in the header. It developed that since the material was corrugated, a great rigidity could be obtained with very thin wall construction and further the metal was galvanized inside and out offering maximum protection against atmospheric corrosion. In addition, it had the attraction of being available from stock in the sizes required.

In addition to purchasing being successful in developing a substitute material which gave a better finished job, we were happy to show a 60% or \$5,000 saving in cost on this project.

#### Don't Take "No" for an Answer!

H. C. Powell, Minnesota Mining & Manufacturing Co., St. Paul, Minn.

We have been purchasing an acetate rayon type of cloth for use as a backing for one of our electrical tapes for quite a number of years and up until about two years ago we thought we were doing a real good job of buying, not only quality wise, but price wise as well.

However, about two years ago our sales, production, and cost accounting people came to me with a plea to do a better job, price wise, telling me that due to increased costs of production brought about by higher labor wages, and higher costs of other component parts of the finished tape, we would have to make a real effort to get a lower price on the backing, which accounts for over 75% of the total cost of the raw materials going into the end product.

At that time we were paying 57¢ per lineal yard for the cloth. Our first step was to approach our then present source to see if he could cut the price in some way. Actually, he was very cold toward such an idea; and, in fact, indicated a definite desire to get out of the industrial goods business entirely. With this sort of reception we had but one alternative, and that was to find an entirely new source.

I had an acquaintance in New York who was in charge of sales for a small but important textile company who sold suitings and linings. I went to my acquaintance thinking he may be in a position to help me locate someone, but much to my surprise, after giving him the whole story and showing him a sample and specifications, his reply was, "I am your boy," and that's exactly what he said and meant.

After several months their goods were approved and we were able to buy it at a price \$.04 per yard below what we had been paying. We thought this was darn good, because based on our monthly consumption we were going to save \$1,900. per month, or \$22,000. annually. But our sales and production people didn't think it was quite good enough. So then we decided to look into the specifications.

After about four months and considerable sampling, it was learned that the goods could be made with a slight change in construction and still maintain tensile and quality. So this additional saving of \$.0225, added to the 4¢, totaled \$.0625 per yard, giving us a saving of \$2,965. per month, or an annual saving of \$35,575.

#### Use Supplier's Know-How

D. A. Riggs, Manager, Purchases & Traffic, Westinghouse Electric Corp., East Pittsburgh, Pa.

One of the more important ways to maximize "value" for money spent is to encourage and make use of the specialized technical know-how of the supplier, and to reward him for his contributions in this direction.

This approach was a vital factor in the cost reduction and quality improvement of a special terminal connector used in large quantities by our Switchgear Division. The connector, although small, required several machining operations, leading to slow production rates and high costs. Due to these problems, the connector was selected for cost and quality review by purchasing department engineers and manufacturing department engineers.

Our approach to the problem was two fold. The manufacturer of the connector, which happened to be our own shop, was asked to analyze the item from all view points—redesign, new tooling, different material, and so forth.

At the same time, purchasing called in several outside suppliers to review the item. The suppliers met with our engineering people and thoroughly reviewed the functions and requirements of the piece.

After a short period of time, our shop section suggested that a simplified manufacturing process could be used if a slightly different grade of material was acceptable. Engineering approved the change, which resulted in a cost reduction of 15% or \$12,000. The outside suppliers also made suggestions, none of which proved attractive enough to be of use. As a result, our shop put their new

process into operation, and our production problems, and costs, were reduced.

However, the story continues: Two of the suppliers who had been working on the project continued to pursue a better answer. After some months had passed Supplier A struck upon a basically new design which would perform the required function, and at a savings of 35% or \$23,000 additional below our then-present cost.

#### A Year's Saving: \$129,500

Mr. Ruzicka, Argus Cameras, Inc., Ann Arbor. In the purchasing department at Argus we are believers in the rotation of buying duties and responsibilities to broaden the experience of our buyers and purchasing agents. A switch in assignments usually pays off in cost savings resulting mainly from a "fresh look" at an item or "new approach".

 During the first quarter of 1955, we gave the buying assignment for a luggage-type case to a newly promoted buyer. Within a short while he had effected cost savings amounting to \$1500 a year by pursuing an investigation into the overall effect of a reduction in thickness of plywood used for the basic box.

\$1,500.00

- By continuing a project started by his predecessor—now his supervising purchasing agent, our buyer succeeded in developing a new source of supply closer to our plant. The annual savings were calculated at \$25,000.00. \$26,500.00
- 3. Within a year, the buyer of cases had instituted a change in material, from plywood to hardboard, and a change in type of construction. The savings realized from these improvements amounted to approximately \$40,000 a year. At the same time an assembly operation was switched from our production line to the vendors with additional savings resulting—\$6,000 a year.
- \$72,500.00

  4. In August of last year the responsibility for procurement of projector cases was moved to our purchasing agent. He took off on a different tangent—the packaging for the case, which became the re-shipper carton for the projector. The result: In six weeks, a redesign and a projected cost savings of \$11,000 a year.

\$83,500.00

5. In late September, brainstorming sessions with our entire buying staff participating, brought up potential areas of cost savings. The practical ones would yield \$112,000 a year in savings. The ideas from the brainstorming session which have been; or are in the process of being adopted will yield savings of \$46,000 a year. \$129,500.00

Our total annual cost savings now in effect amount to \$129,500.00. A fair sum!

### Centralized or Decentralized Purchasing?

By M. B. Heine, Manager, Purchasing Department Phillips Petroleum Co., Bartlesville, Okla.

A BOUT a year ago, the Na-Industrial Conference Board stated that a slow drift toward decentralized purchasing was evident. They had made a study of 212 organizations. Three out of five were changing in the direction of dispersing the purchasing authority.

On the other hand, some companies that decentralized were taking definite steps to consolidate their procurement practices. The report stated that there is a wide range of practice with respect to centralization or decentralization of purchasing author-

ity or activity.

At one extreme, there are a few concerns that place all authority in a central purchasing department and give no indication of any local buying activity. At the other extreme, there are companies that permit each plant to purchase all its own needs through local or plant purchasing departments. Similarly, some use divisional purchasing offices for the plants or operations of each division or district. The practices of the great majority of multi-plant companies fall somewhere in between these extremes. In almost every case, though, local buying is in accordance with policies and procedures laid down by the central office. The majority of these companies in this survey have found it desirable to utilize the best features of each approach. The purchasing function should be guided by what offers the most effective results, whether it be centralized or decentralized or a combination of both.

After having studied the report by the National Industrial Conference Board, I wrote the purchasing department managers of 15 major companies, in the steel, automobile, chemical, electrical, and oil industries. My letter raised five pertinent questions. All the replies fully covered the subject and questions.

From one of the nation's largest steel producers: "The terms centralized and decentralized are relative and their meaning depends in large part upon your perspective. For example, the chief purchasing office of one of the associated subsidiaries would say that he has centralized buying and I would view the company as having decentralized buying with centralized control." Even in this instance, the socalled decentralized subsidiaries avail themselves of the advantages of the company's over-all centralized buying power and are subject to the central purchasing department policies and practices as instituted and practiced by the parent company.

Another large steel producer states: "Certainly some enterprises can operate best as a centralized department-others fall into a twilight zone where there isn't much choice, and there is definitely a place where a business can best be operated decentralized." The author then goes into an interesting discourse on the diversification of his company. He goes ahead to say: "Obviously, coordination of such problems must come from a central point, and this is the purchasing department's responsibility. This is what largely influenced and centralized purchasing." He further states that their centralized purchasing department buys for 42 of their operations including mining, transportation, production, and distribution, and in his opinion their practice of centralized purchasing is essential to his company. He also states that if purchasing is to be a part of management, purchasing has to be in position to act as a part of management, and this can be done only by centralized purchasing and not by decentralized.

A very large automobile manufacturer: "I am sure that the matter of centralized versus decentralized purchasing has been evaluated by many people, from time to time, and believe that some, like myself, have come to the conclusion that there are advantages to both. The ideal, therefore, is one which utilizes the best

#### **Annual Convention Report**



features of each approach. Our organization is intended to take advantage of the major benefits of each system. We recognize that buying responsibilities have to change from time to time as market conditions and operating responsibilities change."

A large electrical manufacturer: "It seems that the question of centralization versus decentralization cannot be answered in general but must be considered in the light of a specific situation. We are convinced that decentralization in our company is the only practical way we can operate at the present time. While our company is considered a large corporation, we are really a collection of small and medium size businesses. Each manufacturing division represents a business in itself with products, customers, markets, sources of supply, and manufacturing problems peculiar to it. Our division managers (managers of a manufacturing plant) run their own business with responsibility for the success of their enterprise. Plant purchasing agents report to their plant manager. The expediting and payment of invoices is done at the plant.

"Centralization of purchasing authority is only desirable where intermittent buying does not permit enough local experience to develop the knowledge and skills necessary for a good procurement. Examples of this kind of purchasing are construction projects and commonly used materials where combined purchasing power can yield major advantages in price or assurance of supply. In addition, our headquarters purchasing staff has the primary responsibility of consulting with and advising top management of material availability and price trends; developing company-wide purchasing policies and practices consistent with corporation policy; consulting with group and

division management concerning purchasing standards and performance in the division; and furnishing personnel for the division purchasing operations and supervising their development by training and rotation."

One of the large chemical companies: In this company, the director and assistant director of purchases are responsible for all purchases of material and supplies. Responsibilities include construction work, utility service, and certain leasing arrangements. They advise that their central purchasing department does about 85% of the dollar volume of purchases. Branch purchasing offices, with other delegated emplovees at various locations. handle the remaining 15%. Purchase orders emanating from the branches, make up about 85% of the paper work, whereas the home purchasing department handles 15% of the paper work but 85% of the dollar volume. This company feels that it is employing to a great degree the advantages of centralized purchasing and the advantages of controlled decentralization. In general, the company's outside buvers report to the plant superintendent, subject to the planning and procedures of the control purchasing department. They are annually furnished a directory of purchasing materials and services as published by their central purchasing department.

Their branches have two types of orders, a somewhat novel idea. I believe it has some merit. On operation, maintenance, and repairs, as well as some raw materials not covered by the central purchasing department contracts, blanket orders, and special arrangements, the branches issue their own purchase orders, expedite and make payment locally. On other types of materials commonly used by the company and covered by the central pur-

chasing department's contracts, blanket orders or special arrangements, a different type of order is issued which the branch expedites but on which the vendor mails the invoice direct to the central purchasing department. I believe this company has presented one of the best examples of centralized purchasing with controlled decentralization that I have encountered.

One of the large can manufacturers: "Our own system can best be described as a balanced plan of centralized and decentralized buying, with the policy determination resting in the central group."

Now I would like to give you some of the replies to my letters of inquiry received from the oil industry.

Example 1: We are decentralizing very broadly-so much, that regardless of past criterions, unless a significant contribution can be made by purchasing centrally, the purchase is made by a divisional office which also handles its own expediting and payment of invoices. For some time, much of our purchasing for domestic production, domestic pipeline, and domestic marketing operations has been on a decentralized basis. During the past year, we have accelerated the decentralization of a considerable amount of our purchasing for domestic refineries. Our divisional purchasing offices draw up their own purchase orders, do their own expediting, and approve their own invoices for payment locally. They are responsible to the general manager of purchases at central headquarters in matters of purchasing policy, purchasing procedure, and use made of purchasing personnel. These district or branch purchasers, however, are primarily responsible to their local administrative head and are carried on the local payroll. Our experience

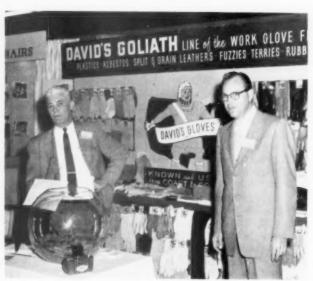
(Please turn to page 320)

### AT THE Inform-A-Show

THROUGH PURCHASING'S

Camera







Selected as "Most Informative Exhibit" at the convention was the display by Recordak, subsidiary of Eastman Kodak Company.

Sharing honors for "Most Informative" was David's Gloves, Inc.

Honorable mention went to the American Society for Testing Materials booth.





Ready and waiting to help.



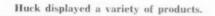
Momentary lull at busy booth.

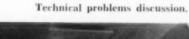


Wide assortment of packaging answers.



Mr. and Mrs. Renard at Keelox exhibit.











High spot was Gaylord's daily contest.



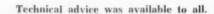
Cable problem discussed at Roebling booth.



#### **INFORM-A-SHOW**

Through the eye of PURCHASING'S Camera

Valves-from tiny to tremendous.









An interesting display of castings.



Demonstration at first hand was available.



Union Bags proved popular carryalls.



Part of the J & L exhibit.





Distributor organization was a big feature.



### "Trial by Jury"

#### The Standardization Workshop



The jury gave full attention to each witness. The defense counsel is sitting at table in foreground.

NE OF the most popular committee sponsored meetings was the Standardization Workshop hell on the second day of the convention. It was practically impossible to get inside the room to hear, "Trial by Jury"; many people were forced to stand outside in the corridor—just as in a big murder trial.

With Harlan E. Cross, chairman of the N.A.P.A. Committee on Standardization presiding, each of the "players" did an outstanding job. The Judge was E. H. "Buck" Weaver of Washington, D. C. Opposing attorneys were: E. O. Haymond, Shell Oil Company, Portland, Oregon and E. Philip Kron, Eastman Kodak Company, Rochester.

Witnesses who were forced to submit to sharp questioning by the "attorneys" were: T. R. Coyle, Sylvania Electric Products; C. T. Haffey, Chas. Pfizer & Co.. Inc.; K. A. Cruise, Bendix Aviation Company; G. L. Haszard, British Columbia Electric Company; Commander D. C. MacKenzie, Bureau of Supplies & Accounts; R. S. Rice, Whirlpool Seeger Corporation; and C. C. Sisk, American Zinc Company of Tennessee.

Using the identification badge worn by all members attending the convention as his example of standardization, Commander Mac-Kenzie explained the pros and cons for wearing one. "The badge may be worn on the front or back of a person," he said. "Whether you wear it on the front or whether you wear it on the back depends on your preference for knowing to whom you are speaking, or to whom you spoke."

After taking the audience through an elaborate array of humorous details as to why the badge should be the size it was, Commander MacKenzie asked for a show of hands as to the number



Commander MacKenzie humorously describes the reasons for wearing an identification badge.

wearing it on the left lapel. Almost to a man, every hand in the audience went up. These same people were crushed when the Commander read from the instructions to registrants, "All members will wear the identification badge on the right lapel."



Standing Room Only was the rule at this meeting.

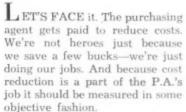


E. O. Haymond proved himself a merciless crossexaminer. The Judge (E. H. Weaver) could have used a few books to sit on.

### 6 Ways to Measure Cost Reductions

By Walter Willets

Purchasing Agent, Conover-Mast Publications, Inc.



Developing measurements of cost reduction isn't just a matter of finding new ways to blow your own horn. It's basic to a successful, profit-making purchasing operation. It's one of the ways to evaluate the job your buyers are doing. It's also one of the ways top management judges what sort of a job you are doing.

There are all sorts of elaborate cost control reports for all phases of company operations—all, that is, except the most important operation dollarwise—purchasing. It isn't that management is unaware of purchasing's importance on profits it's simply because it's tough to measure purchasing cost reduction.

It's just routine bookkeeping to keep track of money spent with suppliers. But this doesn't measure cost reduction performance; it just reflects usage and general market trends. Has purchasing achieved a bona fide cost reduction just because the market for a particular commodity has declined? Not necessarily. But what if the P.A. has been smart enough to anticipate the price decline? Has purchasing achieved a bona fide cost reduction because engineering has redesigned the product? Not usually. In many cases, however, purchasing rates an assist-or sometimes even credit

for the basic idea. For in today's fast moving markets most design changes are the result of teamwork of a variety of groups, including suppliers.

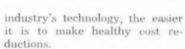
#### **Measuring Cost Reductions**

So you can see its hard to measure cost reduction. But there's one way to do it. Which brings us to rule No. 1.

Make Definite Ground Rules. Decide in advance just what constitutes a legitimate cost reduction. You may have to be arbitrary in some cases but if you're consistent it'll work out in the long run.

TWO—Set a Goal. This will often tie right in with your company's budgetary control system. Estimate in advance just where your costs are going. You don't have to hit it on the nose of course, but the more you plan ahead the better off you are. After you set your guesstimate on the general market trend, set a realistic cost reduction objective. Don't indulge in wishful thinking. On the other hand, don't make the bogey too easy, either. Either way you're just kidding yourself.

THREE—Give Credit Where Credit Is Due. A buyer spending \$10,000 should only be expected to save 1/10th as much money as one spending \$100,000. A saving of just a few dollars when dollar volume is low can be a real accomplishment. Remember—little savings add up. Also, it's a lot easier to make savings on some items than on others. Generally speaking, the more dynamic an



FOUR—Classify Your Savings. How did you achieve specific cost reductions? By negotiating lower prices? Changing specs? Substituting new materials or methods? Obtaining more efficient suppliers? Your records will make it easier to influence internal changes on future savings projects.

FIVE—Report Cost Reductions Regularly. You boost morale and stimulate interest in cost reduction with a regular reporting procedure. Design a form for this purpose. Set it up so you can describe briefly the cost reduction and the savings achieved. It's a good idea to mention the buyer responsible on this report. Copies should go to all costoriented executives — president, controller, etc.

SIX—Don't Kid Yourself With Phony Cost Reductions. If you're sacrificing quality, service, or delivery, you're not achieving a real saving. Make it show up on the profit and loss statement; then it will have real meaning.

These are the six basic rules for successfully measuring cost reduction. Specific procedures must be custom-tailored to your own organization. By measuring savings objectively you are doing more than reporting progress. You are creating the climate for future cost-cutting ideas. And, in today's profit-squeezing economy, you are earning the place on the top management team that you deserve.



Meeting of the Governmental, Educational and Institutional Buyers.

## Our Purchasing Department Training Program

Growing need for qualified personnel in governmental purchasing department made formal training program a must. How the agency competes with industry to attract college grads to purchasing.

By Victor Quam, Chief Deputy Purchasing Agent County of Los Angeles, Los Angeles, Calif.

Two YEARS ago we were working on a projection study in order to determine what our space and personnel requirements would be five, ten, and fifteen years in the future. We found that our dollar volume of purchases, even when adjusted to the purchasing power of the dollar, increased at the rate of approximately 13% per year in recent years.

The population in Los Angeles County between 1950 and 1955 increased from approximately four million to over five million people, an increase of 27%. Projecting the figures, five, ten, and fifteen years into the future provided us with some stimulating areas in which to forecast our personnel requirements.

We became concerned about having qualified personnel for our key positions. The figures we developed on our buyers, whom we call deputy purchasing agents, were particularly alarming. We

have eleven deputy purchasing agents and one senior deputy purchasing agent. These twelve people, who do purchasing, had an average length of experience in our department of over nineteen years. The six oldest averaged 25 years of experience. These six people were at an age where it would not be unreasonable to expect them to retire within the next five years. In addition our rate of growth indicated a possibility that additional positions would be required in the next five years.

We have two hundred and sixty employees in our department. We believe in promotion and promoting from within. We believe in inservice training and allowing each employee to develop to the fullest his capacity to produce. We wanted to maintain training and promotion from within but our survey indicated a possibility that we could not, in all instances, take six or seven years to train an employee to take over one of our purchasing units and operate it with the knowledge, competency, and skill in accordance with the standards we have set. It was necessary to telescope the training period.

#### Civil Service Helps

We asked the Civil Service Commission for their help in establishing an accelerated program. We also brought our problem to the Chief Administrative Office which is similar to a County Manager's office.

As a result of the fine cooperation, suggestions, and planning of both departments our program was established.

First, we were allowed eight positions in our budget for the new position called, purchasing trainee. These positions would be available for our department to fill when qualified candidates were available.

Second with the help of the inservice training department of the Civil Service Commission we established a training program on paper, drew up charts showing job rotation, outlined courses of study, and developed schedules for a standard training program covering a one year period.

Third, the recruitment and ex-

amination division of Civil Service organized a program for recruiting college graduates for a career in governmental purchasing. A background of business administration, accounting, public administration or economics was desirable but not necessarily a requirement. A degree was a requirement.

We outlined to Civil Service the areas in which we believed the candidate must be skilled. Basic arithmetic, of course, is a must. Higher mathematics is desirable but not a necessity. The candidate must be able to understand what he reads and it should be a meaningful understanding. The accelerated program required ability to absorb and retain a considerable amount of information in a relatively short period of time. In addition we wanted our trainees to have maturity, emotional stability, and be able to get along with people.

With our trainee program authorized, our positions established. the basic skills listed-the next step was to find the candidates. Here again Civil Service has been aggressive in their search for talent. They have to be aggressive in the Los Angeles area to compete with the huge aircraft plants (the largest single industry group in Los Angeles County), the mushrooming electronic industry, the lure of television and motion picture industry, and the high pay scale of the oil industry. A two column three inch display ad was placed on the sport page of the Los Angeles Times, reading, "Career Opportunity in Purchasing for College Graduates." The ad mentioned the one year trainee program and closed with the statement that "this is a unique opportunity for college graduates to gain a foothold at good pay in a promising career." A telephone number was listed.

#### What the Training Covers

Out of 130 applicants, three trainees were selected and appointed and our program began.

Basically our program encompasses these four factors:

- 1. On the job work
- 2. Rotating work assignments
- 3. Weekly conferences
- 4. Assigned reading

The first day of the training program is one of general orientation.

For the first nine weeks, trainees work in various store sections: drugs, hardware, food, furniture, etc., rotating from one section to another about every ten days. Physically handling material is part of their daily routine. They become acquainted with proper handling and storage of material, operation of power equipment, processing requisitions, filling orders, posting stock records, maintaining perpetual inventory, etc.

The next sixteen weeks are divided between receiving, standardization division, testing laboratory, follow-up, and the produce market.

In the receiving department our trainee learns about materials and has lessons in the semantics of specifications, the terminology of measurement and the importance of accuracy.

For four weeks our trainee works in the standardization division, a division we have had for thirty years. We receive about five hundred requisitions a day for over two thousand items. All requisitions are screened first by standardization division against existing standards, and requirements are channeled into existing stocks and specifications. Here our trainee becomes acquainted with not only our store catalog but with our library of manufacturers cat-Federal Specifications, NEMA Specifications, ASTM, American Standards Association, United States Pharmacopeia, etc.

Four weeks are spent in our testing laboratory becoming familiar with the various methods of testing.

#### Trainees Learn Expediting

Four weeks are spent in followup contacting departments and vendors, learning the ramifications of our involved records system; learning techniques of expediting: learning how to unravel the tangled threads of a transaction that has been stymied.

One week is spent accompanying the food buyer or assistant to the produce market to inspect fresh fruit and vegetables prior to delivery that morning to our store. This is rugged training because they are up at 3:30 a.m. to be in the produce market by 4:00 or 4:30 a.m.

The second twenty-six weeks is devoted entirely to work in the purchasing division. We have eleven purchasing units, each with assigned categories of materials for which they have procurement responsibility. Trainees are assigned to a purchasing unit for a four week period and then transferred to another unit. We would like to have the trainee remain longer than four weeks in each unit but we must also attempt to establish an understanding of the wide scope and diversification of our purchases. The trainee is exposed to varying trade practices as they differ from industry to industry; specification, terminology, and transportation differences; how to write specifications for such differing items as prebinding of library books and clean-out service for cesspools.

During the entire year of training, one to two hour conferences are held weekly at which time every area of purchasing and storekeeping is touched on. Standardization, specification, law, ethics, statistics, inventory control, trade practices, policy matters, etc., are probed, discussed, and questioned.

#### Reading Assignments

reading includes studying our Standard Operating Procedure Manual, and the following books: Industrial Purchasing, by Howard T. Lewis; Purchasing, by Stuart Heinritz; Government Purchasing and Competition, by Dickson Reck, and NAPA Handbook of Purchasing Policies and Procedures. Periodicals for required reading are: PURCHAS-ING, NIGP Letter Service, NAPA Bulletin, Railway Purchasing & Stores, and Southwestern Purchasing Agent.

We have completed nine months of training with our first group so it is too early to draw definite conclusions as to its success. However, we have reason to be optimistic that the program will add to our reservoir of promotable talent and help to provide the competent skilled individual we will need several years hence.





Purchasing and profits... two sides of the same coin!











Sales up ... profits down ... where can management turn to improve the profit picture today?

Increased productivity? It hardly increased at all last year

Higher prices? Passing higher costs along to customers is running into strong

Part of the answer is in scientific purchasing methods, since 52 cents out of every industrial sales dollar goes into purchases.

A saving of only 1% in purchases of \$30 million amounts to \$300,000. To match that would require an increase of \$6,000,000 in sales based on the current profit margin of 5%

That's why a company's profit today depends in large measare on the ability of its purchasing executive. No wonder he is a key man on the modern management team.

Credit for the management status of the purchasing agent is due, in no small part, to his own professional organization—the National Association of Purchasing Agents—whose members are pledged "to buy without prejudice, weking to obtain the maximum ultimate value for each dollar of expenditure."

Even now, as you read this, N A P A is assembled in Atlantic City for its 42nd Annual International Convention Purchasing men are there by the thou-sands to ewap ideas, compare methods, learn more about purchasing for profit

Thanks largely to the N. A.P.A. and its continuing contributions to scientific purchasing management can turn with confidence to its assignmentations to occurring the stress to improve the profit picture—for in today's economy, purchasing and profits are indeed two sales of the same con.

This message is brought to you by FUBCHASING Magazine, a Convert Most publication, in the interests of covering positive through a better understanding of the ride of the purchasing reservoir in imbudy and as a value to the Natural Association of Psychology Agents.

N.A.P.A. members were greeted with this impressive advertisement when they turned to the financial section of Monday's New York Herald-Tribune. Complimentary copies of the newspaper were distributed to all registrants.



### Purchasing-Management Ad Draws Wide Praise



Reprints of the Herald-Tribune ad were distributed at the entrance to Convention Hall on Monday morning.



Many N.A.P.A. members visited the PURCHAS-ING booth to express appreciation for the ad.

HE campaign for management recognition of purchasing got a dramatic boost on the opening day of the convention from a fullpage advertisement in the New York Herald-Tribune.

With the heading, "Purchasing and Profits . . . Two Sides of the Same Coin," the ad carried statements from six top industrialists on the importance of the procurement function to the profit position of their companies.

Statements included those of Frank M. Folsom, chairman of the executive committee, Radio Corporation of America; H. C. Ramsay, chairman, Worthington Corporation; T. J. Watson, Jr., president, International Business Machines Corp.; I. W. Wilson, president, Aluminum Company of America; John A. Hill, president, Air Reduction Co., Inc.; T. M. Evans, chairman, H. K. Porter Company, Inc.

Additional copy explained where other managements can

turn "to improve the profit picture today." Part of the answer, it said, "is in scientific purchasing methods, since 52 cents out of every industrial sales dollar goes into purchases. A saving of only 1% in purchases of \$20 million amounts to \$300,000. To match that would require an increase of \$6,000,000 in sales based on the current profit margin of 5%. That's why a company's profit today depends in a large measure on the ability of its purchasing executive. . . No wonder he is a key man on the modern management team."

The ad went on to give a large measure of credit to the National Association of Purchasing Agents for its continuing contributions to scientific purchasing.

The ad was placed in the Herald-Tribune by Purchasing

Magazine as a report to top management of American industry on the role of today's purchasing executive—and as a salute to the N.A.P.A. Complimentary copies of the newspaper were delivered on opening day to all registrants, and reprints were distributed at the convention.

Response to the ad was prompt and enthusiastic. Prominent purchasing personalities and association leaders hailed it in such terms as a "great contribution," "distinct service to the profession", and "hard-hitting presentation of purchasing's case."

Demand for reprints of the ad has been heavy, but limited quantities are still available. Requests should be addressed to Purchasing Magazine, 205 E. 42nd St., New York 17, N.Y.

## How to Avoid Legal Pitfalls in Purchasing

By Robert W. Murphy

Vice President and General Counsel, Borg Warner Corporation, Chicago, Illinois

W HEN you call yourself a purchasing agent, you do not call yourself enough. You do not let management know, nor the business community know, what a big job you perform in our modern American corporations.

I suggest you take a leaf out of the book of the Armed Services and call yourselves "contracting officers." This at least describes more accurately some of the important functions you perform. Moreover, it is the key to some of the legal problems involved in purchasing. If you think of yourselves as contracting officers—as important representatives of your corporations, which you are, engaged in negotiating with responsible suppliers contracts which form the framework for future planning and production, then it seems to me you place the emphasis where it belongs.

For one thing, if we consider

ourselves as contracting officers, we will not be satisfied simply to deal with forms. We occasionally become weighed down with forms and procedures. We forget that what we have to do in most cases is to make a rather simple contract of purchase and sale.

When you make such a contract, you agree to accept and your seller agrees to deliver to you specific quantities of a specific product at a specific time for a specific price. There really is not much more to it than that so far as the bare framework of the transaction is concerned. It is important that every contracting officer among you and every man in your department appreciate that he is making a contract covering these specific points, as clearly as they can be covered, so that both parties understand them, and that he is not a human machine spinning out forms.

Not everyone in your department who purchases has time to master all of what have been called the "witty diversities of the law of sales." We lawyers often state that much of the controlling substantive law is found in the interstices of the court procedure. So it is in business. Clearly defined procedures are among the best techniques we have for a clarity of understanding and avoiding of pitfalls. There is no more important function you can



Fred Samis (I.) and Charlie Fullerton of the Canadian Association.

perform than to develop a close liaison with your corporation attorneys to work out simplified and sound purchasing procedures.

My only plea is that you think of yourselves as contracting officers and that in so doing you know the why's behind those procedures.

One reason I place so much emphasis on the term "contracting officer," in a talk on legal pitfalls of purchasing is that in examining some of these pitfalls, we find that many of them involve the failure to make a contract at all. We find that more times than we ever suspect, we do not really have a contract of purchase when we think we have.

#### A Typical Situation

Here is a situation where this is the case:

One very important case involves what is sometimes called the "Battle of the Forms." Under the traditional common law, there can be no binding contract unless there has been both an offer and an acceptance. The rule of law is that if the communication by the seller to the buyer varies any terms of the buyer's offer, that communication constitutes a counter-offer and is not an acceptance even though the seller thought that his answer was an acceptance.

This rule seems on first impression quite reasonable and was in fact workable in the horse-trading, face-to-face days. With the growth of American industry, and with the consequent necessity of reducing minor business transactions to a smoothly running system, has come the use of not only standard lots but also standard terms embodied in form contracts.

Each purchaser has a purchase order form with space on the front for writing in the main terms of the order—for example, the price, quantity, size and delivery and so forth. On the back of the purchase order are paragraphs and paragraphs of eye-straining fine print—as one New Hampshire judge once stated "in the typographical style commonly used for the suppression of information"—which attempt to put as many risks as possible on the seller.

The seller, when he receives the purchase order, sends back his own acknowledgment form (with carbon copies going to the relevant departments of the supplier tor preparation or manufacture and shipment of the goods), and with the principal terms written on the front-these written terms are normally exactly the same terms as the terms on the front of the purchase order. On the back of the acknowledgment form, however, are more paragraphs of fine print, perhaps even more than on the back of the purchase order, but they will be directed at allocating risk to the buyer. In the normal run of business, few will notice this discrepancy, for very few will read the print, and, in 999 cases out of 1000, the goods are delivered on schedule, and no one cares about the discrepancy.

Assume, however, that the seller fails to deliver. Prices may have risen and the seller therefore may have sold the goods to someone willing to pay more than the agreed price. Or the seller may have had production difficulties and be unable to deliver. Or the failure to deliver may have been caused by one of a dozen other factors. At this point the purchaser consults his attorney and after a number of letters or phone calls-at first friendly and later threatening - the attorney files suit for the purchaser against the supplier for breach of contract. The case comes to trial and the defaulting supplier argues that he has not breached any contract. Why? Because the confirmation contained terms which varied the terms of the purchase order. The seller argues that the confirmation was therefore a counter-offer and not an acceptance, and that since the purchaser never did reply after receiving the confirmation, the counter-offer was not accepted and there is no contract.

Under the law in most states the seller wins and the buyer is left holding the bag. I am sure this result seems to most buyers as outrageous. It means that, where forms are used, as is becoming the universal practice in American industry, one can never be sure when he has a contract and when he has no contract un-

less he carefully compares the fine print on the purchase order and the acknowledgment, and clears up the inconsistencies and discrepancies by letter. The result is that the purchaser, who thinks that he is relying on a legally enforceable contract, is relying on nothing but the good faith and commercial responsibility of the seller.

The problem can be alleviated somewhat if both buyers and sellers carefully prune from their forms all unnecessary terms and conditions.

#### Look at the Back

One of the symptoms of thinking of ourselves simply as purchasing agents and not contracting officers is the redundancy of purchase order conditions on the back of our forms. There are few exceptions to the rule that we should never use a condition on the back side of the form that we would not accept on someone else's form. Every one of us is as often a seller as he is a buyer. A principle we often forget when we look to the Federal budget, for example, is that the Federal Government never gave anyone a dollar away from somebody else. By the same token, we must recognize that anything we print on the back of our form will rise to haunt us sometime when we are vendor and someone else copies it on his order form.

However, such pruning requires great care. Most clauses were born out of a painful legal experience and were designed to prevent its repetition. Secondly, even with such pruning, the problem still remains because the law of contracts and of sales which developed in a horse-and-buggy era has not caught up with the facts of modern commercial life.

The legal profession is not unaware of the obsolescence of the law in the commercial area and the curious vicissitudes of the law which require the inclusion of standard operating procedures in the sales contract. For many years the American Law Institute and the National Conference of Commissioners on Uniform State Law (the organization which promulgated the Uniform Sales Act now adopted in some thirty-five juris-

dictions) have been re-examining this area of the law. In particular, they have been working on a proposed statute which would update our commercial law and bring it into focus with the problems of modern-day American industry. After many proposed drafts, numerous national conferences, and innumerable local meetings, they completed in 1951 a comprehensive statute which is known as the Uniform Commercial Code.

#### Pennsylvania—the First

After much study, the state of Pennsylvania enacted the Uniform Commercial Code in 1953, effective in 1954, and commercial transactions within Pennsylvania are now governed by that statute. A number of other states are currently considering passage of the Code. If the commercial community can make its needs felt within the legislatures, it is quite possible that the larger commercial states will all have this modern type of statute within the not-toodistant future.

I am also certain that it, like much reform legislation, will introduce many new problems. It requires detailed study both before and after passage by people like yourselves familiar with practical problems of purchasing. I offer it as no panacea, but as a proposal with which we should become familiar - dealing with some of these difficult issues.

The draftsmen of the Uniform Commercial Code have attempted, among other things, to deal with the problem of the "Battle of the Forms." They have recognized that forms and form contracts are here to stay and that the law had best adapt itself to that fact. Other substantive provisions of the Code cut down enormously on the number of clauses which require inclusion in the sales contract today. but in Section 2-207 of the Code, the Battle of the Forms is given specific treatment.

First, the section distinguishes between form contracts and all other contracts; it recognizes that form contracts produce special problems and it therefore treats them separately—this in itself is something that the common-law does not do because the commonlaw developed before form contracts became common. The section then provides, in speaking of form contracts, as follows:

"When a written offer is accompanied by form clauses prepared by the offeror, a definite and reasonable expression of acceptance operates as an acceptance even though it contains form clauses additional to or at variance with those of the offer."

The section means that in the case that I previously mentioned concerning the failure of the seller to deliver, the buyer would be protected because there would be an enforceable contract under the provisions of the Code. The seller would not be able to back out of the entire agreement simply because two provisions in the fine print were inconsistent.

#### Making a Counter-Offer

The Code goes on to allow the seller to make a counter-offer, if he so desires, without running the risk of entering into a contract at a time when he did not intend to be legally bound. All the seller needs to do to avoid concluding the contract is to propose the new terms and make his acceptance conditional upon the proposed new term or terms. When the buyer sees this condition upon the acknowledgment-and he will see it for the Code requires it to be conspicuously written or typed upon the acknowledgment -he will know that there are only a few new terms to bargain about.

You can see, therefore, that the Uniform Commercial Code, in spite of some ambiguities, in this situation is a step forward in increasing the certainty and protection of purchasers in their legal rights. But if you are doing business in a state which has not adopted the Code, the only advice I can give you is that you should be sure that at some point in the "Battle of the Forms," both parties are agreeing on the same paragraphs of fine print. Notice, however, that if you keep writing back and forth while the plant is going ahead preparing the goods for shipment, as is the normal situation, one day they will be shipped, and then the court will say either that the shipment constituted acceptance if the last piece of paper was from the purchaser, or that acceptance of the goods is acceptance of the terms in the seller's form if that was the last piece of paper to travel between the parties. The pure accident of who last wrote to whom will determine the terms of the contract. Perhaps the standard operating procedure should be "Keep sending your own form until the goods are shipped" The most constructive solun, of course, is that as "contrang officers," we make certain that there be a meeting of minds and immediately resolve any discrepancies.

If time permitted, I would like to consider two other cases where we often think we have a contract but find we do not. The first involves the Statute of Frauds which, with respect to purchases above a certain value, usually \$500, requires a memorandum of the contract to be signed by the party to be charged. In many cases where the supplier does not copy all the terms of the purchase order nor sign an acceptance form, the courts have noted the lack of a memorandum sufficient to charge the seller. Even in cases of a phone conversation where the purchasing agent confirms his order in writing, if this is not answered by a rascally seller, there is often no memorandum sufficient to sustain a suit.

#### Other Pitfalls

A second case involves requirements contracts which have been condemned in various courts because of uncertainty, indefiniteness, lack of mutuality and even violation of the anti-trust laws. They also present problems where the requirements turn out to be unreasonably disproportionate to any stated estimate.

In many of these situations, an unwitting contracting officer may awake to find that the enforceable contract he thought he had does not exist. As contracting officers, we will be careful that these situations do not arise.

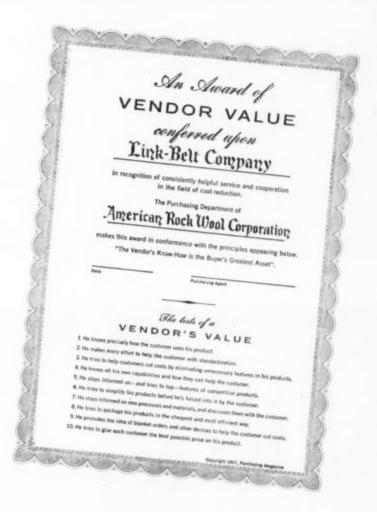
One legal pitfall in purchasing -baffling to lawyer and purchaser (Please turn to page 342)

### First Vendor Value Award Made

THE first Award of Vendor Value—purchasing's public recognition of a supplier's help in cost reduction—was made to the Link-Belt Company at its booth at the N.A.P.A. convention.

The award—developed by Purchasing Magazine as an aid to better buyer-seller relations—was presented by G. R. Smith, director of purchases for the American Rock Wool Corporation, Wabash, Indiana. It was accepted for Link-Belt by W. J. Nighbert, manager of district sales.

"We are happy to make this public acknowledgment of a supplier's willingness to work with us for better value," said Mr. Smith. "For several years Link-





Stuart Heinritz (1.), editor of PURCHASING, looks on as G. R. Smith, director of purchases for American Rock Wool Corp., presents the first Award of Vendor Value to W. J. Nighbert, Link-Belt Company, at the Link-Belt booth.

Belt has given us splendid cooperation and assistance in improving our handling of mineral insulation in all of our eight plants. This is not only a salute to the company but to all its personnel in various parts of the Link-Belt company who have had anything to do with the installation and servicing of our conveying equipment."

American Rock Wool has plants in Wabash, South Plainfield, N.J.; Red Wing, Minn.; Torrance, Calif.; Birmingham, Ala.; Tacoma, Wash.; and Corsicana, Tex.

Awards of Vendor Value, first announced in the May Value Analysis issue of Purchasing, are available to purchasing departments on request to this magazine. The 10" x 14" certificates, printed on stock suitable for framing, and filled in with the supplier's name in script, will be mailed within a few weeks.



#### **INFORM-A-SHOW**

Through the eye of PURCHASING'S Camera

The Inform-A-Show had many attractions.





Exhibitors on hand early in the morning.

Packing and Teflon plastic.





An old friend, always on hand.

New hose shown for first time.





Scott's absorbing sounds drew wide attention.



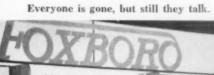
Literature for everyone.



Buyers examine safety helmets.



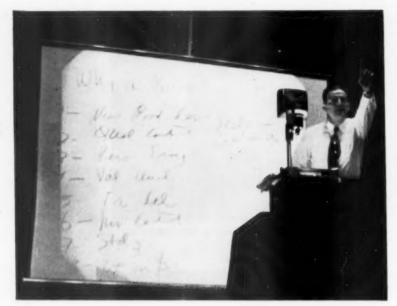
Caught with his hand in the fishbowl.





Activity was steady at Cities Service.





Group Dynamicist Dick Johnson leads brainstorming of "Why a Purchasing Department?"

# Purchasing on the March

Brainstorming. Slip writing. Buzz sessions. PAs who stuck around for the final general convention session got the works. They had some fun, learned about modern techniques of group dynamics, and were able to contribute to the Education Committee's 1957-58 program.

The program was set up so that every basic problem area in purchasing could be covered—"Why a Purchasing Department," "Value Analysis," "Internal Controls," "Evaluating Efficiency," "Training Programs," etc. Each problem area was handled by one



Education Committee Chairman Harold Berry does, some thinking in buzz session on "Internal Controls."

Another busy buzz session in action, discussing the "Training Program."





The think-men on "Evaluating Efficiency" were "Buck" Weaver and Art Pearson.

Presenting the big picture on "Internal Controls" in the purchasing department is "Tony" Ruediger.

of nine Education Project Committees. Each group created its own short program—usually a skit. Purpose of the committee presentation was to outline the problem area as the members of the committee saw it and also to stimulate the thinking of the audience in that area.

After the committee members made their pitch, the audience got into the act. Moderator and master brainstormer was Dick Johnson of the Port of New York Authority. He briefly explained the techniques of brainstorming, slip writing, and buzz sessions to the committee of the commi

the audience and then let them get some practice on each topic.

As a result members of the audience benefited in two ways. Perhaps, most important, they learned something of the new techniques of group dynamics and can apply them to their problems when they return to their jobs.

Also, their thinking was stimulated on all of the important areas in purchasing—some new ideas and solutions to old problems will almost inevitably develop. The Education Committee didn't lose from its own presentation either. It got a lot of good ideas to apply in its coming program.



Look what can come from a "Training Program." The "artist" is Don Taylor. The "critics" are John Moorhouse and "Hack" Jones. Purpose of the skit: to stimulate brainstorming on training programs.



Ken Geist illustrates a few areas where purchasing can help other departments.



SUNDAY MORNING The long trip from Tulsa ends at the Atlantic City railroad station.



A Typical
P. A.
Attends a
Convention

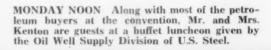


PHILIP C KENTON WARREN PET. CORP. TULSA, OKLA.



SUNDAY AFTERNOON One of the first things Mr. Kenton checks upon arrival is PURCHAS-ING'S Directory Board so he can locate the hotel and room numbers of fellow purchasing agents he would like to get in touch with.

MONDAY MORNING On deck bright and early for the opening convention session, Kenton listens intently to Staff Kellam's talk on the "Professional Challenge of Purchasing."







W HAT do purchasing men do at conventions? If you just skim through the 44-page official program for this year's N.A.P.A. Convention, you'll see there's plenty to keep even the most energetic occupied from breakfast to bedtime. In fact there's so much that no one purchasing agent can hit every event that's listed. But even if you goof off a little, it's unlikely that you'll go home feeling that you've been at a rest home. There's just too much to do. First, of course, are the convention sessions-the economic previews, the commodity analysis, the group meetings, etc. Then there's the Inform-A-Show. Finally there're the opportunities to informally exchange ideas with people from all over the country who are engaged in the same line of work you are.

Philip C. Kenton, assistant purchasing agent of Warren Petroleum Corp., Tulsa, Okla. was a reasonably typical delegate to this year's convention. He's not an officer of his local association; he had nothing to do with the program. He just came to get what he could from the convention activities. Mrs. Kenton came along with him to see Atlantic City. The only untypical thing about Mr. and Mrs. Kenton is they were followed around by Purchasing's photographers so their convention activities could be recorded.

WEDNESDAY MORNING A final tour of the Inform-A-Show brings Mr. and Mrs Kenton to the National Metal Edge Box booth where they see metal edge boxes being made.





MONDAY AFTERNOON At the conclusion of the Monday afternoon sessions, Mr. Kenton relaxes with a highball.



TUESDAY MORNING A tour of the Inform-A-Show, between sessions, brings Mr. Kenton to PURCHASING's booth. Showing off the May Value Analysis Issue is District Manager Joe Bessette.



WEDNESDAY AFTERNOON The convention is over. Now there's time for relaxation. Mr. and Mrs. Kenton explore Atlantic City's famed beach.





 $\mbox{Mr.}$  and  $\mbox{Mrs.}$  Fred Hamilton of Shreveport, La., at the Early Birds dinner.



Old friends meet again. Frank Plumley flanked by Mr. and Mrs Clyde Womer.



-place.

Assistant Secretary Frank Winters (I.) and President Staff Kellam huddle on arrangements for the annual banquet.



As the convention draws to a successful close, Assistant Treasurer Rose Brady and Secretary Howard Ahl make a final check up.



Even Funland couldn't keep these intent members from the business sessions.

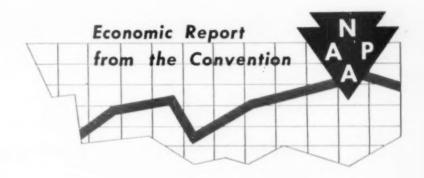
The transportation desk was a busy-and helpful





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PURCHASING



# Business and Commodity Outlook

| N.A.P.A. Business Survey 112  |
|---|
| Most purchasing agents believe business will be better during the last half of 1957. See slowing of price boost trend.                  |
| Economists Optimistic on Short-Term Outlook 113   |
| Panel of economists agrees that business conditions will be favorable for the next few months—opinions vary only in degree of optimism. |
| The Nonferrous Outlook 115  |
| See growing strength for nonferrous metals. Automotive pickup will be a big factor in stepped up demand for these metals.               |
| The Steel Outlook 116   |
| Steel isn't as weak as it seems. Current year will see<br>new consumption records set. Production will be<br>down slightly.             |
| The Fuel Oil Outlook 117  |
| Fuel oil inventories will mount during the summer. Price declines expected. Demand for petroleum products will continue to increase.    |
| The Coal Outlook 118  |
| Changing market patterns benefit coal industry.<br>Coal is finding ways to make up the tonnages lost                                    |

# N.A.P.A. Business Survey



By C. F. Ogden,
Manager of Purchases, The Detroit Edison Co.

#### General Business Conditions

The majority of purchasing executives predict that business, during the balance of 1957, will be better than it has been so far this year. Statistically, 52% say business will be better, 34% the same, and only 14% worse. In predicting conditions for the balance of 1957, as compared to the like period in 1956, not all industries view the fuuture with the same degree of optimism or pessimism. As a result, on an over-all basis, 40% of our members think their business in this period will be better, 23% the same, and 37% worse.

In examining the present position of business, purchasing executives report that it is continuing the sideways movement which has been so evident since the first of the year. Production remains substantially unchanged from last month. New orders are not quite meeting expectations, and 32% of our members say their new order position has worsened in the last 30 days. Only 25% were in this position a month ago.

The upward surge of commodity prices has been halted—not because costs have stopped climbing—but just because, in most cases, competition won't allow further increases.

The employment picture is a little brighter than last month but the improvement is slight.

With money costs high, materials readily available, and some production schedules uncertain, the "heat" remains on to effect inventory reductions wherever possible.

This ready availability of materials is also reflected in buying policy, where the general idea is to make commitments for as short a time as possible into the future.

#### **Commodity Prices**

There are many evidences that competition has really returned. Most materials are readily available and manufacturers are faced with the problem of meeting this competition and, at the same time, facing the fact that their costs, particularly labor, have moved upward. The result has been little over-all movement in commodity prices and almost 75% of our members report them to be unchanged from last month.

#### Inventories

Again, in May, reports from purchasing executives indicate a goal of further reductions

in unfinished materials inventories. As finished goods inventories climb—as many report they are—additional concern is expressed about this tie-up of capital. To keep total inventory investment in balance, many managements are withholding expenditures for raw materials. 34% say that their inventories are lower this month, with 49% reporting no change.

#### **Employment**

There is some evidence that necessary reductions in personnel have been made. Some slight improvement is indicated by the fact that, in April, 31% of our members said employment in their companies was down. This month, the figure is reduced to 25%, with 63% saying it is unchanged, and 12% better.

#### **Buying Policy**

The marked trend toward a reduction in ordering lead time, first reported in the early summer of 1956, is clearly evident again this month. New highs are reached in the number reporting a shortening of their commitment time. For production materials, four out of five of our members are buying in the 60-day and under range. This percentage is substantially unchanged from last month. On MRO supplies, the number limiting their coverage to 60 days or less climbed, from April's 91%, to 94% in May.

Purchases of capital goods items and for plant expansion or extensive modernization are also in the shortest ranges since the post-Korean War period.

With better "off-the-shelf" availability of materials and definite indications of price breaks in many items, buying on a short-term basis will continue to be the order of the day.

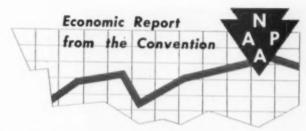
#### Specific Commodity Changes

The price squeeze is on, with very little to report in the way of higher prices.

On the up side are: Some isolated steel items, a few paper products, and some electrical equipment items.

On the down side are: Copper, lead, scrap iron, zinc, nonferrous products, lumber, petroleum, burlap.

In short supply are: Nickel, steel plates, structurals and shapes, and some electrical equipment items.



# Economists Optimistic on Short-Term Outlook

See pickup coming in business activity. Wage-price spirals are expected to continue; views vary on whether there should be a change in credit policies. Rolling adjustments seen as making the role of the purchasing agent more important than ever.

#### Martin R. Gainsbrugh

Chief Economist,
The National Industrial Conference Board

The economic outlook at midyear is one of underlying strength. Strong consumer demand, coupled with a slight dip in production, has taken the heat off inventory position and points to a moderate production rise in the second half. Capital spending outlook appears stronger. Business investment in new plant and equipment can now be expected to continue at a high level throughout the year rather than dipping sharply as had been feared. Letup in inflationary pressures and the need to stimulate demand is seen as favoring an increase in the money supply. Less restraint on money and credit would put new pressure behind the demand for goods.



# J. A. Livingston Financial Editor, The Evening & Sunday Bulletin, Philadelphia, Pa.



The present economic lull is temporary. We're building strength for a business upturn. In spite of a record volume of business, most corporations are comfortably fixed with cash and other current assets. They're not overloaned and they're not in danger of running out of money. That's one reason higher interest rates have not caused a reduction in the volume of plant and equipment expenditures. Many of the conditions for prosperity are present—available money, money for business and available income for consumers. Expanding government spending—Federal, state and local—will help boost the economy. We will gradually work our way out of the current production lull.



Dr. Leo Wolman

Professor of Economics, Columbia University

The wage-price spiral will continue. With a public policy dedicated to high levels of employment it is a mistake to expect monetary and fiscal policy to act as an effective brake on the pattern of cost increases. Business conditions as they exist in 1957 are not likely to change the trend of ever-increasing wages. Without attempting to look too far ahead, the continuance of a wage-price spiral is the most reasonable expectation.

George A. Renard

Associate Editor for Purchasing Economics, The Journal of Commerce

Business, if anything has been too good for its own good. A slowdown in business expansion, and in the galloping costs and prices that have accompanied it, should be welcomed. Much of the expansion in business and the escalation in prices was sparked by war emergencies and defense preparations. These hazards and tensions are tapering off, with the Russians realizing they have bitten off more than they can chew. The rolling adjustments that we have experienced recently are an improvement over the former boom and bust cycles. Under the present pattern of rolling adjustments with an overall sideways movement, the recognition accorded to, and the responsibility imposed on purchasing are greater than ever.





H. E. Luedicke

Editor and Economist, Journal of Commerce

Moderator's Summary—The panel is in agreement that the near-term outlook is promising. Opinions vary merely in the degree of optimism. The long-range outlook is somewhat clouded because of uncertainties surrounding future inflationary trends. Concern over the profit-squeeze worries the panel and there is no agreement on whether there should be an early change in credit policies. Some notes of caution have been sounded, but, over-all, this is certainly no time for pulling in one's horns.

# from the Convention A P

# The Nonferrous Outlook By Tom Camp

By Tom Campbell, Editor-in-Chief, The Iron Age

Expect tightening demand for all major nonferrous metals. Auto production surge will be a big factor.



Tom Campbell

Already orders for copper and aluminum are showing some signs of improvement as many customers scrape the bottom of the barrel following a widespread inventory cutting spree.

By this September, orders for aluminum, copper and zinc will show far more pep than they do now due to 1958 model car production, and ending of the inventory cutting pro-

gram, a slight pick-up in housing and much greater spending for defense items.

These are the five major reasons for the slowing up in nonferrous metal order volume over the past several months: tendency to live off inventories; failure of auto makers to step up car output to the levels they expected; a drop in housing starts, which affected building materials; a falling off in new production of appliances; and tight money.

Car makers can take no chances with 1958 model production in view of the intense competition between makers and in view of the probability that one or more of the car manufacturers may be shut down by a strike. That means car dealers will have to be supplied with large car inventories long before next June 1—the deadline on the fight for more wages and shorter hours.

In the case of the appliance industry, improvement is coming this summer and fall as hourly wages and take home pay move up as a result of long term contracts. The appliance industry is a big user of nonferrous materials that go into parts and electronic equipment.

Farm income will be up this year as much as 5 to 8% This will have an effect on zinc supply and prices because of better sales in galvanized products.

The \$36 billion to have been spent on defense by this June 30 will be actually \$38 bil-

lion. This new \$38 billion budget will wind up as \$40 billion by the middle of 1958. This will make a big call on the nonferrous metals, with more urgent needs to come as the missile programs reach a greater speed and production.

Purchasing agents should not be complacent because they are now having a field day in obtaining many nonferrous items such as copper, zinc, lead and aluminum that previously were tight. Many times in the past, widespread inventory cutting has always been followed by a shortage period with higher prices and delayed deliveries. Those times have not left us for good even though the present breathing spell has been welcomed by harried purchasing agents.

Because of basic costs and because we still depend on imports for much of our copper, copper prices will certainly turn upward in the near future. As to zinc, much depends on the government's stockpiling plans. A pickup in coated products used by farmers and home builders will tend to give the zinc market wellneeded support.

Nickel will be in short supply for some time to come owing to its important position in the defense field and the relatively limited supply. There has been some effort to shy away from making new predictions about the titanium market. Some experts are taking a dim view of titanium's future because of reported changes in defense policies. Such pessimism is unfounded. Titanium is a growth metal, it is finding more civilian uses, and its future will probably follow the same lusty pattern of growth as did aluminum over the years.

No hysterical or panic shortage periods are ahead in the nonferrous markets. But at the same time, there is no sign of a falling apart in the market The present "pause" in the upward movement and the easier availability should be taken advantage of before this fall, when some tight markets in copper, aluminum and nickel come about due to a new upsurge in business—and inflation.

# The Steel Outlook

Consumption of steel in 1957 will hit an all-time high. Output will be slightly under record levels.

By Richard F. Sentner, Executive Vice-President-Commercial, United States Steel Corporation

To MANY in this audience the short range outlook for steel demand and supply is most important. I scarcely need remind this group that during the last several months most steel products, with a few exceptions such as sheared plates and heavy structural shapes, have been more readily available than during most of 1955 and 1956. More recently, as most of you know, the steel industry's operating rate, for the first time in many months, has dropped below 90%.

The uninformed observer could easily conclude that this circumstance is a result of a decline in economic activity and reduced steel consumption. As a matter of fact, certain writers in the public press have either actually said, or implied, just this. Under such circumstances. I believe it is essential that we get the picture of our national economy in proper perspective. Actually, by most measurements our economy is at the highest level in history and this surprisingly enough includes the record years of 1955 and 1956.

Even more significant, perhaps, certainly to those of us who gain our livelihood in the steel industry, is the fact that in spite of ingot production decline, actual consumption of steel so far in 1957 is also at a record level, and is substantially above both 1955 and 1956. What's more, we are convinced this will continue to be true not only for the balance of the second quarter, but, in fact, for the year as a whole.

How can this be in view of the publicized cuts in automobile production and housing starts? In the first place, automobile production for the year to date is actually slightly ahead of the same period in 1956. With this year rapidly approaching the halfway mark, it certainly seems reasonable that for the year as a whole, automobile production will exceed 1956.

In the second place, the automobile industry, while very important, is only one among a number of steel consuming industries. It is not even the largest steel user, trailing behind construction in this respect. The other major steel consuming industries, with the exception of home appliances, are using more steel than in 1955 and 1956.

#### **Cut Inventories**

So, we must look beyond steel consumption for an explanation of the apparent easing of steel availability. One reason is, of course, the reduction in the flow of steel into consumers' stockpiles. In the first quarter of 1956 nealy 4 million tons of steel went into such inventories. This year in a comparable period, our calculations indicate that only about half as much has been added. From this point on, very little will be added to steel inventories, and undoubtedly a moderate liquidation of inventories will take place during the second half of the year. The simple arithmetic of only slightly further inventory accumulation, plus some liquidation, clearly explains our expectation of a continued high rate of steel consumption, despite some further decline in ingot operations.

An equally important factor in

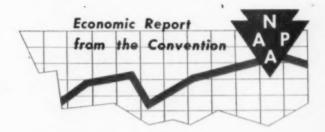
the recently improved steel availability, is the very substantial addition of over 5 million tons to the ingot capacity of the steel industry in the past year. Obviously, this means a sizable increase in steel availability.

I would also like to say that, in my judgment, the steel industry has done an effective job in channeling its newly available ingots, and those released by declining orders for certain products, into those other products where shortages still exist. For example, the all-time record, for the production of structural shapes, set by the industry in March, resulted from this rechanneling as well as from new structural capacity coming into production. If structural shape demand holds, as I am certain it will, 1957 will set a new record for structural shapes production by a considerable margin.

That's the picture for 1957. It will be a record year for steel consumption, and a year in which steel output will approach closely the all-time record of the past two years.

Our analysis of the future leads us to believe that by 1975 fully 50 million additional tons will have to be added to present capacity, a rate of increase consistent with the growth of the American economy. We know that you as steel purchasers are in essential accord with this concept, since we have worked closely over the years with many men in every steel consuming industry in arriving at our conclusions regarding the long-range outlook.

Demand for petroleum products will increase, but not in excess of supply. Fuel oil inventories will climb; price cuts coming.



## The Fuel Oil Outlook

By Leon Hess, Vice-President, Hess, Inc.

PRIOR to the past winter and since the period of hectic supply and transport problems occasioned by the 1951-52 Korean War, the fuel oil industry had a very calm existence. This was all changed by the closing of the Suez Canal and the simultaneous sabotage of pipelines in Mid-East crude service.

Before Suez, oil business life was very interesting but not too exciting. Supplies of fuel oil were comfortable. Petroleum prices were quite steady. In fact, the price of crude oil had had only one change during the 6 year period prior to the Suez closing.

Then along came Mr. Nasser. How and why the Suez Canal was blocked is of no immediate concern to either you as purchasers or we as fuel oil sellers. Our government decided upon a foreign policy and supported a program which probably confused a great many of us as well as our European friends. However, we all must admit that we were kept out of a shooting war.

When the Canal was blocked, the existing world-wide tanker fleet could not possibly move sufficient oil from the Mid-East to Europe around the tip of Africa. Such a round about trip requires almost double the number of days necessary for the usual voyage through the Canal. Our European friends were either to be left without "bare necessity" petroleum supplies or we in the Western Hemisphere had to come to their rescue. The course taken by our government, the support

and understanding of our people and the wonderful job done by the oil industry is now history.

#### Can't Be Ostriches

The experiences of this past winter taught our government and the oil industry that what happens in the Mid-East and Europe has a direct immediate effect on our way of life. The Suez Canal directly affects ocean transportation as much as New York's Lincoln Tunnel affects motor transportation. Our country and the oil industry can no longer act like ostriches when it comes to Mid-East political and economic differences and disputes.

This past winter, as a result of the increased price of residual fuel oils, the American coal industry received a tremendous lift both in its export and domestic business. The coal industry found itself in the unaccustomed position of selling its product at prices which were and are considerably lower than industrial fuel oil. The coal industry likes this and is going to do everything possible to continue this condition.

As a result of the fuel oil price increases, the natural gas industry also received a tremendous boost and became a "full fledged" competitor for energy markets. In most areas of our country today the price of natural gas to the household consumer is less than that of heating oil. In quite a few areas including some Middle Atlantic State cities, natural gas per BTU is cheaper than residual fuel oil on a "dump load" basis. Even

Florida will soon be tied into the natural gas network. New household installations are practically all gas and many people feel that the oil industry isn't doing anything about it. Many old "standard bearer" residual fuel oil customers are installing gas burning equipment to take advantage of cheaper gas costs which presently exist, and the oil industry, you may feel, isn't doing anything about that! Something like the actions of the coal industry when fuel oil started to move in? But wait!

#### Price Cut Coming

During the coming summer there will definitely be a greater build up in inventories of all oil products; such inventories are presently higher than they were before Suez and they are continuing to climb. The oil industry is flexible but not quick enough to put the brakes on when oversupply of any particular product is threatened; it likes to fool itself into thinking that demand will continually exceed supply.

You as fuel oil buyers and we in the oil industry will profit from the Suez closing. Tankers are now being constructed with individual capacity equal to the capacity of six former World War II type tankers, 27,000,000 gallons versus 4,500,000 gallons in one ship. This will mean more and cheaper fuel to you. New additional oil pipelines are being planned in the Eastern Hemisphere to by-pass the Suez and here in the Western

(Please turn to page 338)

# The Coal Outlook

Coal industry seen regaining former strength. Change in market patterns is helping.

By J. W. Kepler, Vice-President-Sales, Pittsburgh Consolidation Coal Co.

W E NOW have a new pattern for fuels and one distinguishable for only the past few years. It came after a shakedown between the years of 1948 and 1954. The railroads changed to dieselization, space heaters looked more to oil and gas, steam plants were invaded with foreign oil and offpeak gas. Coal saw a favorable turn in the cycle only a few years ago. By then, the steady growth of steel, electric power and other users, had built a demand for coal that began to exceed the tonnage lost among the transportation and heating customers. Coal further expanded its sales by obtaining a steadily increasing export outlet. In the meantime, foreign oil found a more attractive market in other countries, while off-peak gas became less abundant on the eastern coast.

This market pattern, while new, will be with us for sometime. First, it tends to utilize more effectively the fuel resources available to us than did the preceding market. It has been laregly free of dump pricing and other temporary disturbances that used to accompany competition and eventually proved costly to producers and customers alike. Producers and purchasers are now free to give more consideration to longrange aspects of supply rather than relying upon day-to-day purchases made upon the assumption that all fuels will be produced not only abundantly but also in excess.

Secondly, effective utilization of these resources will be necessary if the growing fuel market in prospect is to be satisfactorily supplied.

There is another long-range view which cannot be overlooked. The ever present possibility of a national emergency points up the necessity of maintaining a healthy

coal industry which can throw into the breach additional millions of tons of coal to replace liquid fuels which would be siphoned off by the armed services in the event of war. Such a response by the coal industry to meet the greater solid fuel requirements of a nation at war could not possibly be accomplished unless peacetime markets keep mines active and at the ready point.

#### Capital Costs Rise

Fuel producers are finding that it takes an increasingly greater investment for each new unit of output. Moreover, the fuel industries have the added problem of encountering more difficult operating conditions as we go deeper for our product or extract it from thinner and less valuable reserves. To maintain, much less increase efficiency, we must invest in more complex machinery. This results in higher relative capital costs aside from any inflationary aspects.

#### **Expansion and Prices**

The bituminuous industry is building about 30 million tons of replacement and additional mine capacity in 1957. Allowing three years for mine completions on the average, this year's capital expenditures for these mines will total over \$100 million.

In 1955, our industry started its building program involving mounting capital costs while it still rested on a price structure that failed to support the investment of a mining plant over 20 years old. The first price increase to hold since 1948 became effective in September 1955 in connection with the wage advance made at that time. Compare what the industry has had to pay in increases since 1948. From \$14.05 the wage rate per day rose to \$21.45, an increase of \$7.40 and vacation pay

increased from \$100 to \$220. There has been a 20 cent per ton increase in the welfare fund. The average price of steel, based on the finished steel index increased 70%. Yet, while all these factors affecting the coal industry rose from 50 to 150% since 1948, the price of coal had decreased six cents a ton in that period.

I know from the operations of my company that the 1956 price level would not warrant mine capacity expansion beyond what is already underway. We have invested \$60 million in the most modern mine construction in recent years resulting in substantial improvements in productivity, and a minimized labor cost. The advanced mechanization resulted in increased supply and depreciation costs which offset some of these savings in labor. The net return realized under the 1956 price structure would, in no way, support current construction with its greater capital costs. It may be that 1957 prices, reflecting the adjustment of April 1st can give the return that further mine expansion will need. I hope this is true because we are going to need additional mine capacity and it will be to your advantage to have it available when it is required.

It is the hope of our industry, with your help and cooperation, to reach a constant production schedule whereby we can eliminate idle days which tend to increase costs. If we can be advised of your requirements twenty-four or thirty-six months in advance, we shall be able, at the lowest possible cost to have available the tonnages needed as your load factors develop. This assisted planning plus our advancing technology should for the first time, give us reason to believe that we may reach a stable price platform based on the general economy.

# The Pulse of Business

JULY, 1957

There are definite signs the current sideways movement of business activity will soon be over. The new trend will be up. Of course, there'll be the usual mid-summer slump, but then business will be on the upswing.

conditions

PURCHASING'S The pickup won't be a boom on top of a boom, but it will be Summary of greater than might be accounted for by normal seasonal variae c o n o m i c tions. It should be enough to make '57 the best business year we've ever had.

> Particularly promising for the short term outlook is the fact that companies plan to increase their new plant and equipment expenditures during July, August and September. The government estimates new plant and equipment outlays during this period will be at a \$37.9 billion per year rate. During the same period last year, capital investment was running at a \$35.9 billion per year rate. For 1957 as a whole, new plant and equipment expenditures should hit \$37.4 billion -- 62% more than in '56. Big spenders will be: public utilities. railroads, nonferrous metals, steel.

Confused about what's happening to inventories? You read that everyone is cutting back on their stocks of materials -- that it's the inventory adjustment that's causing the business lull. Then the government statistics come out, and month after month they show inventories creeping higher.

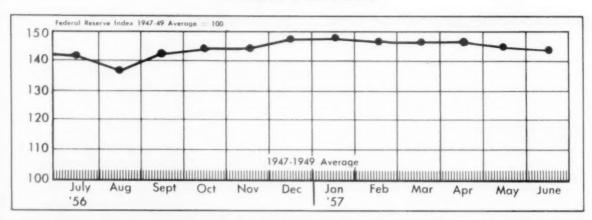
Here's what's happening: Total value of inventories is rising, but the rate at which it is going up has slowed markedly. During 1956 we added to inventories at the rate of nearly \$500 million per month. Now inventories are going up only \$150 million per month.

The result is that even though inventory totals are still inching up, the reduced rate at which they are climbing has virtually the same effect on the economy as if the value of inventories were actually declining.

Another point to keep in mind: the slowing of the inventory accumulation rate is even greater than the figures indicate because of inflation. An item purchased for \$100 in January will have an inventory book value of about \$103 at the end of the year if it isn't used. This is due to the fact that for the last 10 years inflation has upped prices roughly 3% per year. Inflation is one of the factors that makes it possible for inventory values to go up even though a company may be trying to hold the line.

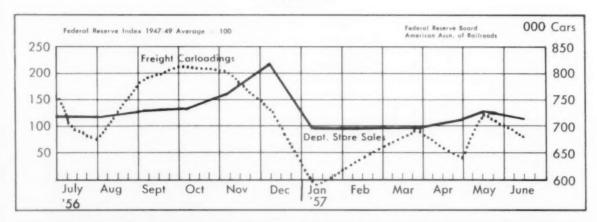
## THE PULSE OF BUSINESS

#### **PRODUCTION**



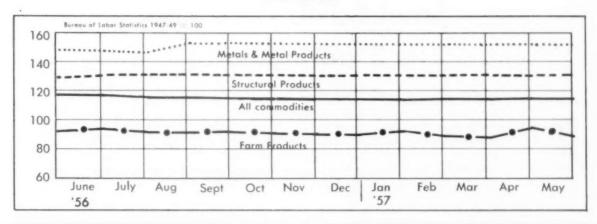
|                                     | ASE        | LATEST   | MONTH<br>AGO | YEAR    | % OF CHA |       |
|-------------------------------------|------------|----------|--------------|---------|----------|-------|
| Industrial Production Index         | 1947-49    | 100 143  | 144          | 142     | 0.7      | + 0.7 |
| Steel Production (Weekly)           | 000 net to | ns 2.274 | 2.210        | 2.378   | + 1.5    | 1.1   |
| Electric Power Production (Weekly)  | mil KWH    | 10,936   | 11,286       | 10,951  | 3.1      | 0.1   |
| Bituminous Coal Production (Weekly) | 000 net to | ns 8,910 | 9.615        | 8.845   | 7.3      | +0.7  |
| Auto, Truck & Bus Output (Weekly)   |            |          | 145,671      | 126,464 | + 5.8    | +21.9 |
| Petroleum Output (Daily Average)    | 000 bbls.  | 7.285    | 7,390        | 6,916   | 1.4      | + 5.3 |

#### **TRADE**



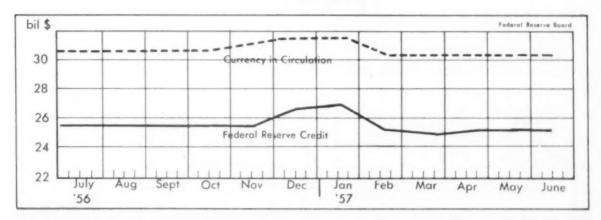
| Carrier San                            | BASE     | LATEST   | MONTH<br>AGO | YEAR<br>AGO | % OF CH |       |
|--|----------|----------|--------------|-------------|---------|-------|
| Dept. Stores Sales Index (Fed. Res.)   | 1947-49= | =100 110 | 134          | 109         | -17.9   | + 0.9 |
| Commercial Failures (Dun & Bradstreet) | no.      | 225      | 297          | 238         | 21.2    | 5.5   |
| Freight Carloadings                    | cars     | 671,785  | 718,921      | 719.209     | 6,6     | 6.6   |
| Miscellaneous Carloadings              | cars     | 317.871  | 350,964      | 352,067     | 9.1     | - 9.7 |

### **PRICES**



|                                   | BASE     | LATEST     | MONTH<br>AGO | YEAR    | % OF CH | ANGE IN |
|-----------------------------------|----------|------------|--------------|---------|---------|---------|
| All Commodities (BLS)             | 1947-49  | 100 117.1  | 117.2        | 114.3   | 0.1     | + 2.4   |
| Farm Products                     |          |            | 90.6         | 90.6    | 1.2     | 1.5     |
| Metals & Metal Products           | 1947-49- | =100 150.0 | 150.1        | 146.7   | 0.1     | +2.3    |
| Nonmetallic Minerals Structural   | 1917-19- | =100 135.1 | 134.5        | 128.6   | + 0.5   | +5.1    |
| Steel Billets (Pittsburgh)        | net ton  | \$74.00    | \$71.00      | \$68.50 | 0       | + 8.7   |
| Steel Scrap, heavy melting, Pitts | net ton  | 57.00      | 45.00        | 15.00   | +26.7   | +26.7   |
| Copper, electrolytic              | lh.      | .32        | .32          | .46     | 0       | 30.4    |
| Rubber (rib-smoked sheets)        | Hr.      | .33        | .321/2       | .3038   | + 1.5   | + 8.6   |

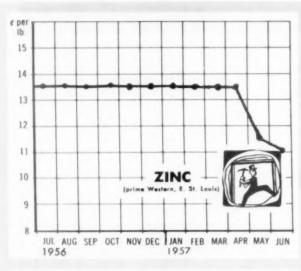
### **FINANCE**

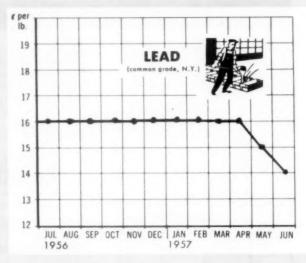


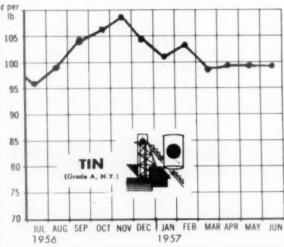
| O BANGELLAND                     | BASE            | LATEST                             | MONTH                               | YEAR<br>AGO                         | % OF CHA                 | ANGE IN<br>YEAR          |
|----------------------------------|-----------------|------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|
| Stock Prices (Standard & Poor's) | mil 8<br>mil \$ | 47,60<br>9,548<br>21,987<br>30,836 | 46.36<br>11.842<br>25,177<br>30.589 | 15.99<br>11.249<br>25.320<br>30.505 | + 2.7<br>- 19.1<br>- 0.7 | + 3.5<br>- 15.9<br>- 1.3 |

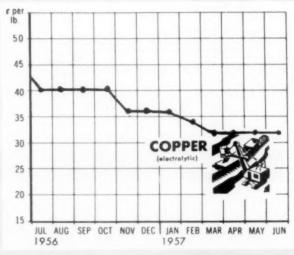
# Steel Scrap Price Rise: Is It an Indicator?

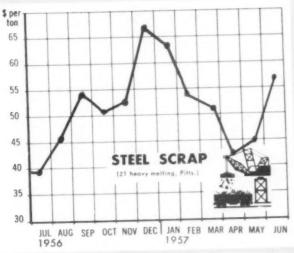
Most startling market development has been the skyrocket rise of steel scrap prices. The sharp price climb caught just about everyone off guard. Reason for the violent upswing is hard to figure. Best explanation seems to be: (1) after a prolonged period of living off scrap inventories, the steel mills were caught short, (2) part of the buying pressure is in anticipation of stepped-up steel production by late summer. The scrap price hike is extremely significant since scrap is often a lead indicator on which way the economy will move. If scrap goes up, general business activity frequently follows.

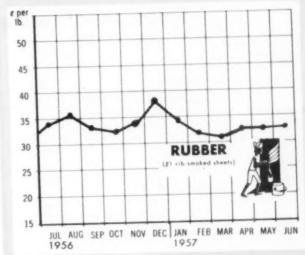


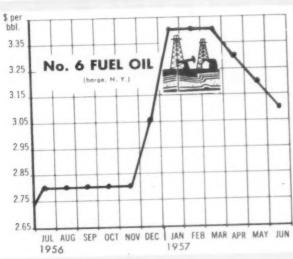


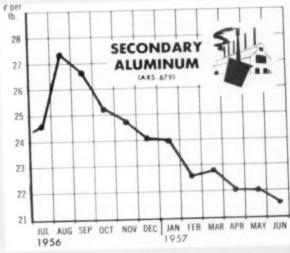


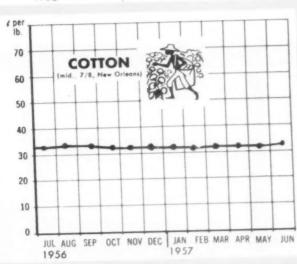


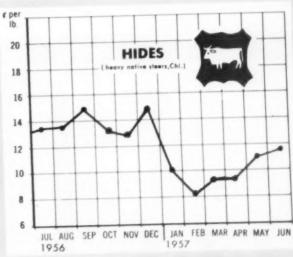












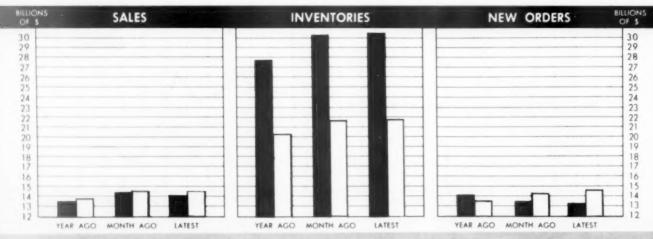
## THE PULSE OF BUSINESS

## Sales, Inventories and New Orders

| Value of Manufacturers' Sales                   |              | 1956   |               |              | 1957     |        |
|---|--------------|--------|---------------|--------------|----------|--------|
| Seasonally Adjusted (Millions of Dollars)       | Apr          | Nov.   | Dec           | Feb.         | Mar. (R) | Apr.   |
| All manufacturing industries                    | 27,231       | 28,707 | 28,688        | 29,130       | 28,770   | 28,549 |
| Durable-goods industries                        | 13.519       | 14.321 | 14.390        | 14.726       | 14,438   | 14.100 |
| Primary metal                                   | 2.442        | 2.475  | 2.344         | 2.396        | 2,380    | 2,395  |
| Pabricated metal                                | 1.434        | 1,541  | 1.459         | 1.544        | 1.524    | 1,561  |
| Machinery                                       | 3.740        | 4.162  | 4.084         | 4.225        | 4,171    | 4,103  |
| Transportation equipment                        | 3,001        | 3,387  | 3,748         | 3,847        | 3,706    | 3.392  |
| Lumber and furniture                            | 1,105        | 1,039  | 1,000         | 1,038        | 997      | 986    |
| Stone, clay and glass                           | 705          | 706    | 731           | 713          | 731      | 687    |
| Other durable goods                             | 1,092        | 1,011  | 1,024         | 963          | 922      | n.a.   |
| Nondurable-goods industries                     | 13,712       | 14,386 | 14,293        | 14,404       | 14,332   | 14,449 |
| Food and beverage                               | 4,245        | 4,342  | 4,402         | 4,520        | 4,562    | 4,583  |
| Tobacco   | 348          | 350    | 365           | 363          | 345      | 355    |
| Teatile   | 1,123        | 1,184  | 1,146         | 1,191        | 1,118    | 1,112  |
| Paper   | 884          | 910    | 873           | 870          | 860      | 912    |
| Chemical  | 1,970        | 2,095  | 2,098         | 2.023        | 2.057    | 2.038  |
| Petroleum and coal                              | 2,499        | 2,682  | 2,662         | 1,731        | 2,716    | 2,778  |
| Rubber  | 445          | n.a.   | n.a.          | 476          | 467      | n.a.   |
| Other nondurable goods                          | 2,198        | 2,369  | 2,298         | 2,230        | 2,266    | n.a.   |
| Book Value of Manufacturers' Inventories        |              |        |               |              |          |        |
| Seasonally Adjusted                             |              |        |               |              |          |        |
| (Millions of Dollars)                           |              |        |               |              |          |        |
| All manufacturing industries                    | 47,958       | 51,355 | 51,442        | 51,903       | 52,263   | 52,482 |
| Durable-goods industries                        | 27,723       | 29.925 | 29.978        | 30,190       | 30.388   | 30,587 |
| Primary metal                                   | 3.688        | 4,128  | 4.224         | 4,342        | 4,408    | 4,399  |
| Fabricated metal                                | 2,933        | 3,039  | 3,112         | 3,044        | 3,040    | 3,162  |
| Machinery                                       | 9,292        | 10,159 | 10,143        | 10,193       | 10,160   | 10,188 |
| Transportation equipment                        | 6,781        | 7,511  | 7,413         | 7,511        | 7,557    | 7,595  |
| Lumber and furniture                            | 1,812        | 1,811  | 1,757         | 1,810        | 1,846    | 1,806  |
| Stone, clay and glass                           | 1,022        | 1,058  | 1,027         | 1,074        | 1,100    | 1,121  |
| Other durable goods                             | 2,195        | 2,219  | 2,302         | 2,216        | 2,274    | n.a.   |
| Nondurable-goods industries                     | 20,235       | 21,430 | 21,464        | . 21,713     | 21,875   | 21,895 |
| Food and beverage                               | 4,448        | 4,715  | 4,705         | 4,706        | 4,752    | 4,691  |
| Tobacco   | 1,865        | 1,847  | 1,843         | 1,965        | 1,996    | 2,050  |
| Textile   | 2,492        | 2,632  | 2,666         | 2,655        | 2,618    | 2,578  |
| Paper   | 1,134        | 1,232  | 1,249         | 1,264        | 1,293    | 1,323  |
| Chemical  | 3,407        | 3,703  | 3,691         | 3,796        | 3,821    | 3,123  |
| Rubber  | 2,817<br>970 | 3,089  | 3,136         | 3,084<br>985 | 3,131    | n.a.   |
| Other nondurable goods                          | 3.102        | 3.190  | n.a.<br>3.152 | 3,245        | 3.245    | n.a.   |
| Manufacturers' New Orders (Seasonally Adjusted) |              | -      |               |              |          |        |
| All Manufacturing Industries                    | 27.752       | 29.429 | 28.817        | 28,228       | 27,670   | 27,804 |
| Durable goods industries                        | 14,073       | 15,130 | 14,439        | 13,979       | 13,524   | 13,214 |
|   |              |        |               |              |          |        |

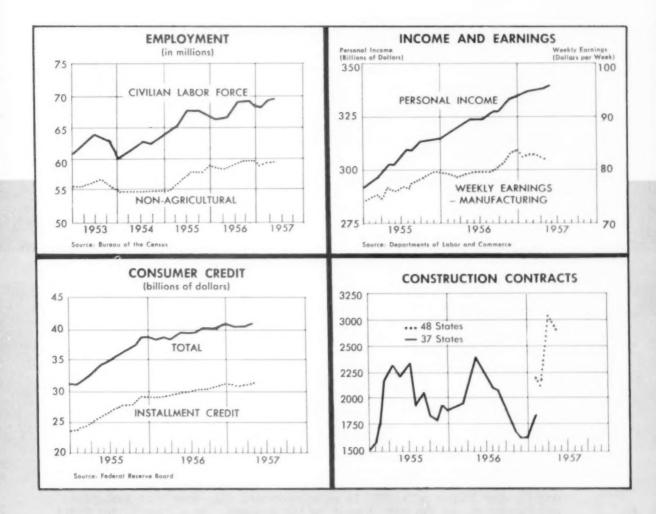
p -- preliminary r -- re

n.a. - not available



DURABLE GOODS

NON-DURABLE GOODS





#### Straws in the Trade Wind

- WAVE OF PRICE HIKES COMING--P.A.'s can definitely count on paying more for a lot of things in the near future. Effect of steel price increase will ripple throughout the economy. Also adding to pressure for higher prices are other scheduled wage hikes. So you can figure that just about everything made of steel will be up--as will aluminum and rubber. And to make a hot summer a little more uncomfortable, there's a chance beer and soft drinks will cost more, too.
- 158 AUTO FORECASTS ARE CONSERVATIVE—First forecasts on 158 auto sales are on the modest side. An executive of a major auto supplier estimates 6.3 million cars will be turned out in 158, while an economist for one of the auto companies pegs sales between 5.8 and 6 million units. When the hoopla starts over the new models in the fall, the forecasts will probably be higher.
- HOUSING STARTS HIT YEAR'S HIGH--New housing starts--vitally important since they affect such a wide cross section of industries--hit a 990,000 per year rate in May. This is tops for '57. However, the gain is seasonal and is the lowest rate for any May since 1951. In May of last year, houses were going up at a rate of 1.146 million per year. Government housing experts are now figuring '57 housing starts will total between 900,000 and 1 million. Earlier predictions were for a 1.1 million year.
- BOOST FOR CAPACITOR INDUSTRY--Manufacturers of electronic capacitors have reason to be optimistic. Defense Dept. has stated that its capacitor requirements will double each year for the next several years.
- NO EASING OF TIGHT MONEY POLICY--You can figure money will continue to be a scarce commodity throughout the rest of '57. Earlier there had been hope that the Federal Reserve Board would ease its tight money policy, but this possibility is now out. FRB is more convinced than ever that inflation, not recession, is the main threat to the economy. As a result, the tight money policy will continue unless there's a sudden unexpected slump.
- LUMBER SLUMPING, PRICES DOWN-The lumber industry is having a rough time. Production is at its lowest point since 1950, nevertheless output is still exceeding demand. During the first quarter prices dropped another 1%, continuing the decline of the last half of '56. Lumber consumption for the first quarter totaled 8 billion board feet, off 16% from 1956.
- SAY '57 WILL BE BEST EVER--The U. S. Chamber of Commerce is predicting that economic activity in the current year will be the highest ever. It expects prices to continue rising, forecasts a pickup in home building during the last half, believes auto sales will be about the same as last year. The Chamber figures retail sales will be 3-4% higher than last year, says profits may equal or exceed the 1950 level for the first time.



Once the officials of N.A.P.A. had concluded their more important business, they were solemnly (?) inducted into the Hendricks Club.

# At Work and Play...



As lonely as a flea on a Texas plain, Jess Pate gets the divided attention of his colleagues.

The condemned men watched everyone else enjoy a hearty meal.



JULY, 1957



TV sets attracted large crowds.



Bussman is a regular exhibitor at N.A.P.A.



## **INFORM-A-SHOW**

Through the eye of PURCHASING'S Camera

Plastics in many varieties.



Sons of Texas listen attentively.





Testing furniture at Royal booth.



Impressive photo display.



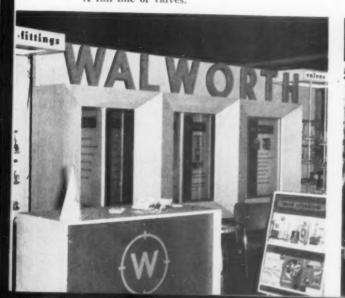
Slot machines and coke machines.

A full line of valves.



Bulbs of every description.

The ladies were interested also.

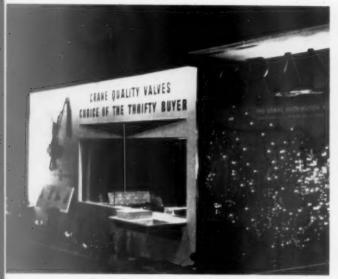






## **INFORM-A-SHOW**

Through the eye of PURCHASING'S Camera



Crane had their usual impressive display.



Moving display of new spray process.

An outstanding display of products.



Wide line of office supplies.





Subject: Rivets, grommets and terminals.



A busy booth.



Special 18 inch elbow was a feature.



"You don't say!"

New show exhibitor.



Tic-tac-toe game drew the curious.





# Greetings from Washington



"To the members and guests of the National Association of Purchasing Agents meeting in their 42nd Annual Convention, I send greetings.

"In our marketing economy, your skilled and responsible participation plays a key role in our Nation's prosperity. In helping to restrain inflationary forces and to make commerce contribute to the advancement of our people and friends abroad, you add strength to the foundation of peaceful trade. Best wishes for a memorable convention."—DWIGHT D. EISENHOWER.

"It is always a pleasure to send my personal greetings and best wishes to the Annual International Convention of the National Association of Purchasing Agents. For I hold in high esteem the contributions of your membership to the field of marketing and your help in achieving that optimum use of money, materials and equipment which spells sound and growing prosperity.

"Last February I said that business is good and the outlook is also good and that we have a healthy economy. Nothing that has happened since has altered my opinion.

"However I also warned that Government, business, labor and public must all pitch in and help ease inflationary pressures, which otherwise could threaten the well-being of all our people.

"Yours is a function particularly strategic to advance the productivity of our people and thus preserve and promote the purchasing power of money. May this 42nd Convention bring new inspiration to your membership and a new dedication to public service through the wise use of the vast resources at your command."

-Sinclair Weeks, Secretary of Commerce.

"The Business and Defense Services Administration appreciates the opportunity to again extend its greetings to the National Association of Purchasing Agents gathered in Convention.

"As members of an agency of your Government organized to carry on industrial mobilization and defense activities as well as to provide peacetime economic, statistical, and advisory services to business, we well know of the many activities of your members acting as agents for the Nation's industrial purchasing power. We well know how your wise and effective use of this power is an important factor in furthering a sound and growing economy....

"With best wishes for a successful Forty-Second International Convention."—H. B. McCoy, Administrator.

"The meeting of the National Association of Purchasing Agents always brings some advance in the economic life of our people. And it offers an opportunity to strengthen the system of free enterprise upon which our whole life and living must rest.

"I wish you success."-Herbert Hoover.



# How Great Lakes Steel inspects scrap quality

Two things don't belong in this gondola—and a team of trained Great Lakes Steel scrap inspectors is searching them out. The intruders are non-ferrous material and high sulphur content ferrous material, which contaminate heats and spoil the quality of finished steel.

Additional visual inspection in the stockhouse and on the open-hearth floor, magnetic screening, and weight checks all combine to detect and eliminate these adulterants, before the scrap is fit to become a part of Great Lakes steel.

Sound like a lot of trouble? It's worth it, to us and to our customers. And it's just one more step in Great Lakes Steel's continuing program of quality control that assures you the finest steels. Make it a point to contact your Great Lakes Steel representative for the rest of the story. He's as close as your telephone.



Here approved scrap, in charging boxes on buggies, heads for the open hearths. Quality scrap gives finished steel improved surface and ductility characteristics.

#### **GREAT LAKES STEEL CORPORATION**

Detroit 29, Michigan . Division of



District Sales Offices: Boston, Chicago, Cincinnati, Cleveland, Grand Rapids, Houston, Indianapolis, Lansing, Los Angeles, New York City, Philadelphia, Pittsburgh, Rochester, St. Louis, San Francisco, Toledo, Toronto.



# Looking Forward in Governmental Purchasing

By Clifton E. Mack, Commissioner Federal Supply Service, Washington, D.C.



Advantages of the Conover-Mast Purchasing Directory are outlined to Phil Kenton (left) of Tulsa, by Dick Roney, assistant publisher.

T HERE are many who think of public purchasing as a mechanical, turn-the-crank operation. They think information is translated from the requisition to an invitation to bid; distributed to a mailing list of suppliers, primarily consisting of those who have been asked to be placed on the bidder's list, and whose bids are publicly opened and awards are made to the lowest responsible bidder.

However, anyone who has been sufficiently close to public purchasing during recent years to know what is going on will agree that a great dear has been done in the way of improvements. Much more value is being obtained for the tax dollar for supplies and services, because of improved purchasing practices.

Emphasis is being placed upon the use of commercial standards. Similarly, the importance of developing information as to the best sources of supply is recognized by all public purchasing officials as highly important to the buying job. Procedures have been simplified and methods are being adapted to serve specific needs best and to avoid non-essential costs for warehousing and dis-



# **NIBROC TOWELS**

#### more than any other paper towel

PURCHASING AGENTS in every industry prefer the new Nibroc towels. They're stronger, softer, friendly to the face, and absorb water like lightning. In white they're the whitest you've seen—product of an exclusive new "white magic" bleaching process. And new manufacturing methods have vastly improved Nibroc towels in the natural shade, too.

Used more by industry and institutions than any other, Nibroc is the first and today more than ever the finest wet strength towel. To save, buy Sofwite® and Softan® tissues. Your dealer will furnish samples, tell how Nibroc reduces towel costs. He's listed under Paper Towels in Yellow Pages. Or write Dept. NG7, Brown Company, 150 Causeway St., Boston 14, Mass.

Other NIBROC Quality Products: INDUSTRIAL WIPERS . WINDSHIELD WIPERS . KOWTOWLS . WALL, FLOOR, and RECESSED CABINETS



Offstage scene just before business outlook session.

tribution. There are better techniques employed in the Management of inventories.

#### Changes in Public Purchasing

My purpose is to tell you briefly about further changes that are occurring. We should start with the fundamental principle that we have a public trust which requires us to obtain the utmost value for each tax dollar spent. That sounds somewhat trite. But it is of the highest importance that we keep this principle constantly in mind for direct and meaningful application to our everyday activities.

We are not buying for manufacture, fabrication, or resale, but that our purchasing is **primarily** for use. If we follow that thought through it raises many interesting considerations and provides us with very sound guides for meeting our responsibilities.

You will agree that the kind of buying job you do is dependent upon the quality of performance in developing the specification, stating the quality or performance for the intended use, determining the quantity required, the method of supply that is most economical, and whether deliveries are in accordance with the specifications. All these factors are in addition to competitive purchasing and careful selection of the right sources of supply.

Consequently, the thought suggests itself that if there is this interdependence between the supply functions, including purchas-

ing, something should be done to relate them. When this situation was first recognized an effort was made to coordinate the separate supply functions as well as traffic management and transportation through the establishment of boards and committees. The term, "procurement" was adopted as a means of emphasizing the acquisition of goods from excess

stocks of other federal departments or agencies, repair or rehabilitation. It gives recognition to the idea of providing supplies or supply services at reduced cost—in other words, meeting supply needs with the minimum of new purchases.

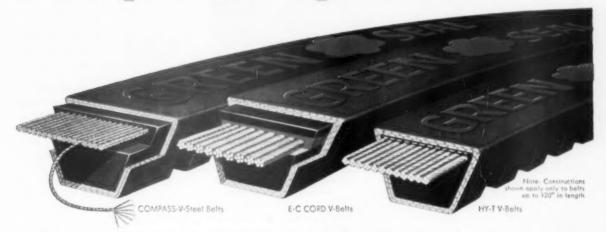
The next step was the establishment in 1934 of a central supply agency for the Federal Government in the Procurement Division. Treasury Department, which brought together the supply functions under a single supervision for policy determination and authorized the consolidation of supply operations. This was a step in the right direction but failed to recognize the vastness of the supply operating responsibilities in the Federal Government. Steps were then taken to obtain legislation to clearly establish the responsibility for supply. As a result the Federal Property and Administrative Services Act (P.L. 152) was enacted into Law July 1, 1949.

As a consequence we have today under the Federal Property



Mr. and Mrs. Frank Curran meet Paul Farrell, (L), PURCHASING's executive editor, on the boardwalk.

# Now-V-Belts with the Green Seal solve the major multiple drive problem



The Green Seal stands for true dimensional stability in V-belts. And with Green Seal dimensionally stable belts you can be sure that matched sets are truly matched and will stay matched—that mismatching (the biggest problem in belting multiple drives successfully) is a thing of the past.

The key to dimensional stability lies in the tension members of the belt. For many years, steel cables as developed by Goodyear were the only length stable load carriers, but now they have been joined by synthetic cords, thanks to the

amazing Triple-Tempered 3-T process.

The 3-T process is an exclusive method of tempering the cord with Tension, Temperature and Time for maximum strength and minimum change in dimensions. This assures no change in length during storage plus greatly increased shock- and stretch-resistance on the drive.

The end result is smoother, longer-running teams of belts that give you maximum, trouble-free, horsepower hours at minimum cost. What better reason for specifying V-belts with the Green Seal?

GREEN SEAL BY GOOD FEAR

THE GREATEST NAME IN RUBBER

| The Goodyear Tire                   | & Rubber Company   | y, Industrial Products Divi | sion, Dept. 794, Ai | ren 16, Ohio                  |
|-------------------------------------|--------------------|-----------------------------|---------------------|-------------------------------|
| Please send me more information ab- | ut how V-Belts wit | th the Green Seal solve t   | he major problem    | in belting multiple V-balt dr |
| Name                                |                    |                             |                     |                               |
| Company                             |                    |                             |                     |                               |
| Street Address                      |                    |                             |                     |                               |
| City                                |                    | Zone                        | fints               |                               |

Compass, E-C Cord, Hy-T, Green Seal -T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio



Mixed emotions greet one speaker's remarks.

and Administrative Services Act an emphasis that is in effect a completely new approach to what has been known as public purchasing. We call it supply management because there is placed within our organization the responsibility for all supply functions and the consequent need for management direction to coordinate toward a single objective which is that of getting supplies to points of use at the minimum cost.

#### Stress Good Management

In substance, the Federal Property and Administrative Services Act emphasizes certain major points. It stresses the importance of good property management practice. In effect, it requires:

 Adequate inventory controls and accountability systems for property.

(2) Continuous surveys to determine excesses which are promptly reported to CSA.

(3) Care and handling of such excess property and in order to minimize expenditures for property, the administrator shall prescribe policies and methods to promote the maximum utilization of excess property by executive agencies. He shall also provide for the transfer of excess property among Federal agencies and to the organizations specified in Section 109 (f).

In effect, the law states they shall use what we have by following good property management practices. As a result we have emphasized the repair and rehabilitation of property where it is economical to do so. As an illustration, through the active efforts of the General Services Administration's records management organization, requisitions more than 40,000 file cabinets have been filled through the use of existing file cabinets by transferring inactive records which are now stored at records centers in cases rather than steel cabinets. In other words, new purchases totalling approximately \$3 million were avoided through special efforts to use property we now have.

Another illustration of property management is maintenance. We have had excellent cooperation from the motor vehicle industry in providing up-to-date suggestions for vehicle maintenance. Also by pooling cars, better mileage and lower costs per vehicle have resulted. Basic, of course, to property management is inventory control and continuous review to make sure that any excess items are made available for needs in another agency to avoid new purchases.

Use standards have been developed so that the right use application will be followed to obtain the best use and performance from property. This has applied primarily in the field of office equipment, such as electric typewriters, but the same practices are, of course, followed in a number of commodity areas. The whole idea of property manage-

ment is to keep your inventories to a minimum consistent with foreseeable needs and to use what you have most economically to avoid new purchases.

In effect, these principles I have related add up to ways and means of using what you have to avoid making a new purchase.

As a result of P.L. 152, we now emphasize our responsibility as "Supply management" for very obvious reasons. First, it is because legislation for the first time in any law spells out in the declaration of policy that it is the intent of the Congress in enacting this legislation to provide for the government an economical and efficient system for: (a) procurement and supply of personal property and nonpersonal services and performance of related functions; (b) utilization of available property; (c) disposal of surplus property; and (d) records management. Other sections of P.L. 152 implemented items (a), (b), and (c) by consolidating scattered property functions and by providing a new uniform charter for property management.

Our responsibility, therefore, is in terms of supply, not purchasing or purchasing and stores, but supply. This is a very important factor because it emphasizes a principle, which we sometimes overlook, that the true cost to the taxpayer is the total expense of supplies distributed at points of use. The commodity price, of course, is very important, but so are other expenses. The actual cost, of course, is the sum total of all expenses right up to the point of use. That is why the determination as to the method of purchase becomes important, whether by direct delivery or perhaps a call-forward contract that provides for supplies as needed to avoid warehouse costs.

Inherent also in the supply approach is the fact that the determination of the quality of performance required, the decision as to the quantity needed, the lead time established, the method of purchase, likewise, inspection and testing, and distribution factors, are all considered as a part of the total objective to provide

(Please turn to page 334)







For over 50 years, leading manufacturers in all the major industries have used Gripco lock nuts to simplify production, lower manufacturing and maintenance costs and to improve the durability of all kinds of assembled products. To maintain this enviable reputation for outstanding product quality, the Grip Nut Company of South Whitley, Indiana, uses quality-controlled Youngstown Scrapless Nut Wire and Bars as basic raw material.

Because it comes to your plant free from all piping, injurious seams, laps, die marks, internal tearing and cupping, and non-metallic inclusions -Youngstown Scrapless Nut Quality Wire will provide increased production with fewer rejects which adds up to a healthy over-all profit boost. Also, its smooth coating extends die life thus minimizing costly die replacements.

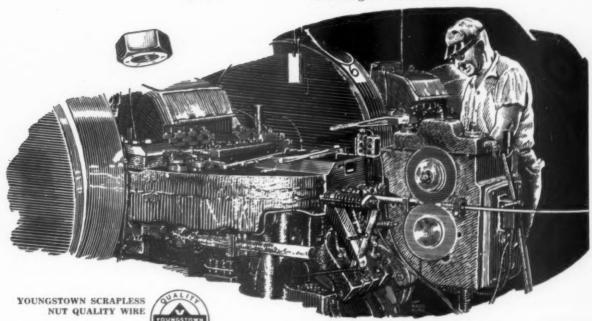
# YOUNGSTOWN SCRAPLESS NUT WIRE

Helps Maintain Quality of GRIP Lock Nuts





Youngstown Scrapless Nut Quality Wire is provided in special resulphurized steels as well as in standard AISI grades. Cold Heading Bolt Wire, of the same high Youngstown quality, is also available in all standard carbon and alloy analyses. Why not phone or write to our nearest District Sales Office for additional information or metallurgical assistance?



THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Yoloy Steel General Offices - Youngstown 1, Ohio District Sales Offices in Principal Cities



#### Chart Aids Material Selection

WHAT'S the right material for a newly designed or redesigned part? Even a line of engineering materials from a single manufacturer doesn't always give the answer-the line may have an extremely wide variety of grades and characteristics.

Two materials, for example, made by National Vulcanized Fibre Co., Wilmington, Del. offer such a very broad range of properties that different grades are used for hundreds of different mechanical, electrical and chemical parts. The materials are vulcanized fibre and Phenolite laminated plastic.

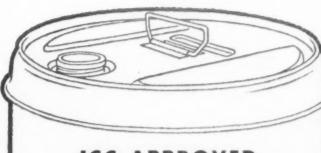
The company has prepared a chart (shown below) that will aid the user in choosing the right grade of either material. The user must keep in mind over-all material properties, then compare the specific characteristics of the individual grades to select the one best suited for the application.

Often, when cost is an important consideration for a new part, the comparator chart is first used to select the materials that fall in the proper price range and then to select the best grade on the basis of material properties.

| G × Good F =   | -         | _FIR     | WOL I     | LAN          | BATE    | PLAS      | MIC _     | _          |          | _                    |         |               |          |          | canto     |           |          | -               |                |            |            |           |   |          |         |            |       |               |           |            | -          |                | BRE    |
|--|-----------|----------|-----------|--------------|---------|-----------|-----------|------------|----------|----------------------|---------|---------------|----------|----------|-----------|-----------|----------|-----------------|----------------|------------|------------|-----------|---|----------|---------|------------|-------|---------------|-----------|------------|------------|----------------|--------|
| PROPERTIES   | A-911     | X-8-     | F. 214-8  | PC-<br>206-0 | n.      | 209-0     | KG1-      | 1000 - NAS | -1 000   | :8                   | C-10    | MCB-<br>524-4 | 197      | 4-0r     | 67.50     | A+ 000    | 751.4    | 786             | 100            | N-<br>2100 | 6-1<br>801 | 4.58      | 2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>2000<br>200 | 4.00     | - 0.0   | 9-9-       | 100   | GF-<br>9100-A | CP.       | 9000       | . 808      | Con-<br>ercial | Rose   |
| Disinctric strongth perpendicular to leminations (500 volts per mill on 1/16° × 0) | E         | E        | a         | o            | E       |           | a         | E          | g        | a                    | P       | P             | a        | P        | 0         | P         | P        | P               | g              | P          | P          | E         | a   | ,        | ,       | r          | E     | ,             | r         | a          | ,          | P              | ,      |
| Dielectric strength * Farallel<br>to laminations (50 EV * G)                       | P         | p        | 6         | P            | G       |           |           | ĸ          | E        | P                    | p       | P             | 0        | P        | a         | p         | P        | p               | E              | p          | P          | ,         | ,   | G        | G       | a          | 6     | e a           | a         | g          | a          | a              | a      |
| Dielectric Losses  | P         | P        | P         | P            | 0       | a         |           |            |          | a                    | P       | P             | *        |          | -         |           |          | p               | a              |            | 0          | 0         | 0   |          |         |            |       | P             | -         | 6          | 0          |                |        |
| Insulation resistance  | P         | P        |           | P            | P       | 0         | g         |            |          | P                    | P       | P             | P        | P        |           | P         |          | -               | E              | 9          | P          | F         |   |          | G       | P          | E     | P             | P         | P          | P          | 9              | P      |
| Arc Resistance   | P         | P        | P         | P            | P       | P         | P         | P          | P        | · a                  | P       | 0             | P        | P        | P         | P         | P        | P               | P              | P          | Р          | P         | E   | E        | E       | E          | 7     | G             | · ·       | P          | 8          |                | R      |
| Destrical Stability Hamid  | P         | P        | ,         | ,            | 0       | a         | 8         | E          |          | a                    | ,       | ,             | a        | P        | 0         | ,         | P        | P               | E              | Р          | P          | ,         | 0   | E        | E       | a          |       | G             | ,         | 9          | g          | P              | P      |
| Tenetic Strength (15,000 pm toG)   | G         | 6        | 9         | P            | 0       | -         | P         | G          | 0        | n                    | P       |               | -        | -        | -         | F         |          |                 | P              | G          | P          | E         | E   | G.       | E       | 0          | 8     | a             | a         | a          | G          | Р              | P      |
| Plenural Strength (20,000 pated)   | G         | G        | P         | P            | P       |           | 7         | 0          | G        | P                    | 0       | a             | 0        | 6        | 0         | 0         | 6        | 0               | -              | a          | 8          | E         | 8   | 6        | K       | 0          | E     | ā             | 6         | 6          | G          | P              |        |
| Compressive Strength<br>(90,000 pet = 0)   | G         | G        |           | ,            | 0       | ,         | 0         | ,          | P        | a                    | 0       | 1             | a        | a        | a         |           | E        | E               | Р              |            | 8          |           | E   | E        | 8       |            | E     |               | E         |            | E          | G              | E      |
| Impact Strength (1.0 ft.lbe.G)   | a         | a        | 1         | 1            |         | P         |           |            |          |                      | a       | a             | a        | Q.       | 6         | 6         | a        | G.              | 0              | G          | 8          | 8         |   | E        | E       | E          | Е     | E             | E         |            | 2          | G              | G      |
| Sond Strength  | 0         | 0        |           | P            | 6       | P         | g         |            | -        | a                    | 8       | E             | E        | E        | E         | P         | 8        | a               | 0              | P          | 0          | 6         | K   | 6        | P       | 1          |       | 0             | 0         | G          | G          | 9              | 0      |
| Witer Absorption   | P         | P        | 10        | 10           | 0       | G         | B         | E          | E        | 0                    | -       | 9             | 0        | F        | 0         | P         | P        | F               | E              | *          | P          | 1         | 0   | E        | E       | F          | 8     | 6             | 0         | 0          | 0          | P              | P      |
| Dimensional Stability Damid  | F         | p        | ,         | ,            | g.      | g         | E         | 8          | E        | Q                    | P       | F             | G        | *        | α         | 7         | p        | F               | E              | ę          | F          | F         | G   | E        | E       | P          | £     | G             | 0         | 0          | 0          | P              | P      |
| Heat Resistance  | F         |          | P         | P            | a       | P         | 0         | F          | 1        | 0                    | 8       | F             | 0        | P        | Ö.        | ti        | 6        | d               | P              |            | 0          | a         | 0   | E        | E       | d          | G     | 0             | 0         | 0          | G          | P              | P      |
| Acid Resistance  |           |          | F         | P            | P       |           | a         | a          | 0        |                      | 1       | 7             | a        | F        | -a        | -         | P        | P               | 6              |            | *          | F         | P   | 6        | 6       | 7          | a     | 10            | g         | G          | g          | P              | P      |
| Alkali Resistance  | P         | 1        | P         | P            | P       | 1         | P         | F          | P        | 8                    | P       | G             | P.       | P        |           | P         | P        | P               | F              | - 17       | F          | p         | 0   | 15       | a       | 0          | D     | P             | F         |            |            | P              | P      |
| Organic Solvent Resistance   | 7         | p        | P         | P            | 0       |           | E         |            | P        | a                    | 0       | a             | G        | 9        | 0         | .07       | 10.      | 0               | 6              | 6          | 6          | 0         | 0   | P        | P       | 0          | 0     | 0             | Ġ         | 0          | G          | -              |        |
| Machining Qualities  | *         | 2        |           |              | g       | 0         | 0         | 6          | G        | 7                    | E       |               | E        |          | E         | r         | P        | ,               | 8              | G          | P          | P         | P   | P        | P       | P          | P.    | P             | F         | P          | 2          |                |        |
| Punching Qualities   |           |          |           | 2            | ,       | G         | P         | a          | g        |                      | 0       | F             | ,        | E        |           | ,         | P        | ,               | 1              | 0          | P          |           | P   | P        | ,       | P          | G     | ,             | ,         | ,          | ,          |                |        |
| Base Material  | Braft.    | Page     | Paper     | Paper        | Paper   | Paper     | Paper     | Paper      | 7aper    | Paper                | Cotton  | Cotton        | Cotton   | Cotton   | Coston    | Asbestos  | Paterice | Asbestos<br>Mat | Mylon<br>Cloth | Cotton     | Staple     | Cost.     | Chert.  | Staple   | Cont.   | Class      | Coot  | Gless         | Gless     | Bees       | Glass      | Cotton         | Cotton |
| Type of Reals  | Passol 1c | Parellic | Presentic | Passal Ic    | Penalic | Presentic | Presad Sr | Presedic   | Passolic | Wollfied<br>Phemolic | Phenici | Nelamine      | Phenolic | Phenolic | Phenoi Le | Poemed 1c | Phenolic | Phenolic .      | Phenolic       | Phenol 1c  | Phenol Ic  | Phenol 1c | Winning   | 51110000 | Silicon | Me Lamilon | Byong | Polyeoter     | Polyester | Pol yester | Pol yester | -              |        |
| ATEE Inculation Class  | A         | A        | A         | A            | A       | A         | A         | A          | A        | A                    | A       | A             | A        | A        | A         | A         | A        | A               | A              | A          | 8          | 8         | B   | H        | И       | 18         | B     | -             | B         | 8          | В          | A              | A      |
| Comparative Price 8  | .7        | .6       | .8        | .8           | 1.0     | 1.0       | 1.1       | 1.2        | 1.       | 1.2                  | 1       | 1. 4          | 1        | 1.7      | 1         | 1         | 10.7     | 10.0            | 3.7            | 1 ×        | 2.9        | la. 7     | h. 4  | 16.      | 6.7     | h 8        | 8.7   | 0.9           | .8        | 1.6        | 1.2        | 1.4            | .6     |

\*\*\*CHIARATIVE PRICES are based on the price of Grade SX on an arbitrary scale of 1.0 and are scaled on 1/16" tirkness, and talerance required. (RVTS) This chart based on average test values on 1/16" thick sheet as

# \*\*\*STAR SERVICE makes Continental Steel Containers your best buy



### ICC-APPROVED TIGHT-HEAD PAILS

Capacity 5 gallons. Made from heavy 24- or 26-gauge steel. Meets ICC specifications 17E and 37D. High-strength body available with straight sides or top and bottom beads. Drum top offset for easy stacking. Electric lap-weld side seam, and compound-lined, double-seamed head and bottom.

For full specifications on all Continental steel containers, contact your nearest Continental representative. When you purchase steel containers, get the most for your money. This means the best in service as well as the best in pails and utility cans. At Continental, we go all out to give you what you're looking for—with our 4-star steel container service.

### FULL LINE

Whatever product you're buying for, Continental has just the size and style container to fit it. Handi-Cans in 2½ and 5 gal. sizes, lug cover pails from 2 to 12 gal., flaring pails from 3½ to 6½ gal., plus 5 and 6 gal. tight-head pails.

### QUALITY

Made of heavy-gauge steel in ultra-modern plants, Continental steel containers are thoroughly tested to meet ICC specifications and to conform to CFC/UFC Rule 40. Colorfully lithographed, these sturdy, reusable containers will continue to promote your product long after their original contents have been emptied.

### RESEARCH

As part of our 4-star service, customer research men are available to help you right in your own plant. In addition, scientists at our Research and Development Center in Chicago are constantly working to bring you new and better packaging ideas—such as Continental's Perma-Linings for hard-to-hold products.

### QUICK DELIVERY

Just say the word and we'll deliver all the steel containers you can use—any time, any place. Continental's excellent production facilities and carefully selected warehouse points in many sections of the country guarantee better service when and where you need it.

So get full value from your purchasing dollar—with Continental's 4-star steel container service. Call anytime.





Eastern Division: 100 E. 42nd St., New York 17 Central Division: 135 So. La Salle St., Chicago 3 Pacific Division: Russ Building, Son Francisco 4

TAILOR MADE

# new products

### and cost-saving ideas

### Blueprints Direct from Microfilm

The Naval Bureau of Aeronautics has disclosed that it is now using a new, low-cost, high speed method of producing enlarged engineering drawings directly from microfilm.

The printing is done from microfilm in an XeroX Copyflo twenty-four-inch printer, an automatic device that produces drawings up to two feet wide at a speed of twenty feet a minute. The time required for any one frame is thus only a few seconds.

The Copyflo continuous printer was developed by The Haloid Company of Rochester, New York, pioneers in xerography—a fast, electrostatic process requiring neither water, liquid chemicals, nor darkroom. The prints are dry on emergence from the machine.

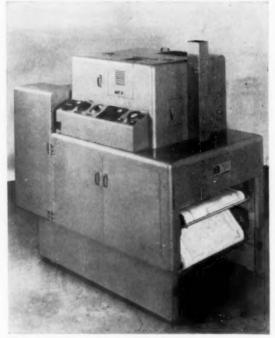
The printing process is completely automatic. Individual microfilm frames are mounted in diecut apertures of cards punch-coded for various sorting purposes, and emerge from the printer in the order of entry. Up to 400 prints of a single frame may be had by use of a pushbutton that repeats the exposure.

One of the biggest advantages of this development is the ability to use almost any typ or grade of roll paper with the machine. It prints on inexpensive paper as well as it does on high quality bond.

Roll microfilm in either 16mm or 35mm size may also be used with an auxiliary attachment. The change may be made in ten minutes.

Reduction ratios are 16x and 20x. Enlargements in the Copyflo printer are either 15x or 20x. Recordak and Remington Rand equipment will reduce A through D sized drawings onto microfilm for later reproduction by xerographic Copyflo continuous printer.

Circle No. 38 on Inquiry Card-Page 17



This 24-inch continuous printer (above) xero-graphically turns out engineering drawings at the rate of 20 ft./min. from microfilm.

It does it completely automatically. Individual microfilm frames (below) are mounted in punched cards. The cards are coded for automatic sorting.

| 83 | 0.0 | 1  | 4 |    | 8 8 | ŧ  | į | 1 | 1 | 8  |   | 4 | ķ |   |   |   |   |   | ė  | !   | 1 | ! |    | !! |   | ŧ | 1  |     |     |    | 9 |    | 18  |   |     | , |   | 1 8 | 1   |   | 8 | 2.5 | 0.0 | 81 | 14  | 19 | 8 5 | 1.5  | 81 | 1.5 | 1  | 18  | 1 | 41 |     | 2 | 12 | 81 |     |   |
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### "WHEN I NEED PIPE I Call L. B. FOSTER CO."



### ... and a Foster truckload will be on the way immediately. Or a carload...or any quantity."

Yes...regardless of how much pipe you need...or what kind of special pipe, or unusually-large size...it's a good bet you'll find most of the items in Foster warehouse stocks. And it's also a sure bet you'll get immediate and dependable service. For service is a specialty at L. B. Foster Company... especially on the hard-to-get items.

When you need pipe—seamless, seamless carbon pressure pipe, seamless alloy, prime tested and structural—in all sizes, 1/8" thru 36"—and now aluminum and PVC pipe, valves, fittings. Try us today . . . wire or call any of the six Foster offices collect.



PIPE · RAILS · STEEL-SHEET PILING · PIPE PILES · H-BEARING PILE · VALVES & FITTINGS

ILIBIAOSIATE CO.

PITTSBURGH - NEW YORK - ATLANTA - CHICAGO - HOUSTON - LOS ANGELES

For More Information Circle No. 217 on Inquiry Card-Page 17



Exaggerated picture? Sure . . . but any one of these shelving problems may be troubling you . . . sagging shelves, insufficient storage space, inflexible wooden shelving, poor layout. To solve these problems, call on your Deluxe steel shelving dealer. He will engineer efficient and flexible shelving racks of the sturdiest-built, best-designed shelving made.

### These Deluxe features allow you to install Deluxe shelving at lowest cest:

- One-piece bin-type uprights for rigidity and fast erection
- Boltless, completely adjustable shelf brackets
- Snap-in dividers—for quick flexibility
- Factory-reinforced shelves to cut down installation time
- Coped shelf corners to increase storage capacity

Look for local dealer under Shelving in the yellow directory. Write to factory for "Shelving Reference Manual."



### DELUXE

DELUXE METAL FURNITURE CO. Warren, Pa. A Division of Royal Metal Manufacturing Co.

For More Information Circle No. 218 on Inquiry Card—Page 17

### new products

#### Replaceable Nylon Faces for Soft Hammers



After testing many different types of soft face striking materials, the Chicago Rawhide Mfg. Co., has adopted replaceable molded nylon faces for the striking heads of a line of rawhide hammers. Tests showed that this specific molded nylon compound possesses wearing characteristics superior to other materials. In addition, the nylon material is resistant to acids, oils and moisture. Also nylon faces will not chip, spark, mushroom nor mar polished or painted finishes. They are interchangeable with rawhide faces.

Circle No. 39 on Inquiry Card-Page 17

#### Polyethylene Containers Unit Molded

Polyethylene containers molded in one piece are available in a range of types and sizes for packaging of a variety of products. Virtually any color can be used. Panels may be plain or stippled. Lettering or designs can be embossed, hot stamped with foil or imprinted on the cover panel The base, cover and fasteners are molded as a unit. Interior partitions, slots, supporting "cradles" and threaded posts can be furnished, if desired. The containers, made by Werner Mfg. Co., 4401 First Ave., Lyons, Ill., can be used for such divers products as electric shavers, bandage kits, or food gifts.

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### eroquip Engineering Notes



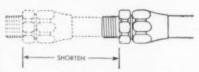
R A MAIN IR

The advertisement at the right says you can save money if you buy Aeroquip Hose Lines. Let's see how right this statement is.

Consider the production line along which a

product using hose of Teflon is assembled. Your purchasing department will buy anywhere from three to six months' supply of hose lines to feed the production line. In this day and age of rapid change, it is pretty much a foregone conclusion that some engineering revision or modification will be required on the product.

Where these changes affect the hose lines, if you purchased Aeroquip Mose Lines originally, the detachable, reusable hose fittings always used by Aeroquip make it possible to rework the hose lines. Should the hose lines need to be shortened, it is simple to remove one of the hose fittings, cut the hose to the proper length and re-assemble. If the hose

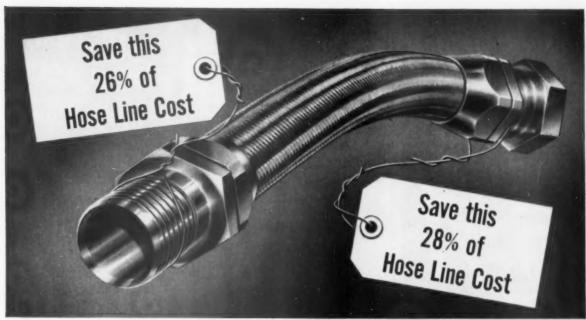


line needs to be longer, a new piece of hose can be installed easily, using the same fittings over again. This can be done in your plant by your own people, or if our costs are lower—as they might be if the quantity of lines to be reworked is large—you can have them reworked by us.

The advertisement shows the proportion of cost of a hose fitting to the cost of the hose assembly. This proportion varies with the complexity required in the hose fitting. A fitting composed of complicated bends of rigid tubing, with perhaps one or two bosses welded into it, may run several times the cost of the hose itself. In any case, simple or complicated, the cost of the fittings will usually exceed the cost of the hose.

If you purchase hose lines with permanently attached hose fittings, no rework is possible and you must pay at least double for the privilege of making an engineering change. If you purchase Aeroquip 2802 Hose Lines made of Teflon you can, as the ad says, save money—often more than half of what new hose lines would cost you. And, you can buy the Aeroquip Hose Line with its Detachable, Reusable "supper gems" Hose Fittings at prices competitive with the price you pay for hose lines made of Teflon with permanently affixed hose fittings.

Ballain fr VICE PRESIDENT, ENGINEERING



Hose assembly pictured has male pipe and JIC swivel fittings for industrial applications. Aircraft hose lines use more complicated fittings that represent a much higher percentage of the total hose line cost.

### Aeroquip 2802 Hose Lines (Teflon\*) Cost Less

### BECAUSE "super gem" FITTINGS ARE REUSABLE

Hose lines made of Teflon excel where applications require lubricity, non-adhesion of sticky or viscous materials, resistance to temperatures up to 500° F., chemical inertness and extra long wear. Admittedly, these hose lines are expensive, but their true cost cannot be determined by purchase price alone. Hose lines of Teflon with permanent-type, swaged-on fittings are priced competitively with Aeroquip 2802 Hose Lines (Teflon), but Aeroquip "super yem" Fittings are reusable and can be salvaged. And the fittings are the most expensive part of any hose line!

Because it had purchased a "production quantity" of hose lines made of Teflon with permanently attached fittings, one company was forced to scrap more than \$100,000 worth of hose lines due to a single engineering change. With Aeroquip 2802 Hose Lines, the "supper gem" Fittings could have been salvaged and reused with savings of thousands of dollars.

Not only do "super yem" Fittings give Aeroquip 2802 Hose Lines cost-cutting advantages, they assure the ONLY leakproof, ageless assembly of fitting and hose of Teflon. Want more information? Mail this coupon:



"super gem " is an Aeroquip Trad-mark.



Cutaway of "amper gem" Fitting with metal-to-metal line seal pointed out at left and lip seal at right. Together, these features assure permanent protection against leakage.

\*DuPont trade name for its Tetrafluoroethylene resin.





#### AEROQUIP CORPORATION, JACKSON, MICHIGAN

INDUSTRIAL DIVISION, VAN WERT, OHIO; WESTERN DIVISION, BURBANK, CALIF.; MARMAN DIVISION, LOS ANGELES, CALIF.; GENERAL LOGISTICS, PASADENA, CALIF.; AEROQUIP (CANADA) LTD., TORONTO 10, ONTARIO.



### the safest workers stand on SOL-SPEEDI-DRI

"double S-d"—improved Sol-Speedi-Dri, now green-flecked to tell you you've bought the one that out-performs the rest—is found in the safest plants everywhere, helping to prevent accidents due to slips and falls and keeping plant floors clean, dry and safe.

Here's the do-more, do-it-better story:

ABSORBS—thirsty for all liquids as well as oils and greases

RETAINS—power to hold; no "leaks" and "bleeds"

COVERS—most efficient volume-per-pound floor coverage

RESISTS—doesn't become "mushy"; won't cake, mat or break up in use

DUSTLESSNESS—the most dust-free mineral floor absorbent sold today

UNIFORM—bag after bag, ton after ton, carload after carload

Green-flecked double S-d is available within hours from distributors everywhere. Check coupon, clip to your letterhead and mail to SPEEDL-DRI DIVISION, Minerals & Chemicals Corp. of America, 1086 Essex Turnpike, Menlo Park, New Jersey.

Free sample Literature Name of nearest distributor



For More Information Circle No. 220 on Inquiry Card—Page 17

### new products

Magnesium Hand Trucks Carry 450 lb.



The Colson Corp., Elyria, Ohio, is introducing a series of light-weight magnesium hand trucks weighing only 16 lb but capable of carrying loads of 450 lb. They outlast conventional types because they are rust proof and incorporate no castings or weldments to break. They roll easily on 6" or 8" ball bearing wheels and are equipped with semi-pneumatic tires that protect floors.

Circle No. 41 on Inquiry Card-Page 17

#### Plastic Lining Unharmed By Most Chemicals

A plastic laminate lining made of Kel-F, a material showing extreme resistance to acids, alkalis, oxidants and most solvents, isideal for protecting the interiors of tanks, vessels, reactors, containers, hoppers, fume hoods and ducts. It is also suitable for surfacing laboratory bench tops, floors in chemical plants, conveyor belts or any surface exposed to extreme corrosive conditions. This non-toxic and noncontaminating material has a temperature range of 350° F to -100° F. Its non-wetting, nonsticking surface resists severe abrasion. It is made by U.S. Gasket Co., Camden, N.J.

Circle No. 42 on Inquiry Card-Page 17



For More Information Circle No. 221 on Inquiry Card—Page 17 PURCHASING

# Sling Bulletin

Reporting the Outstanding Performance of Union Wire Rope's Machine-Braided Wire Fabric Slings.



### Tuffy's a Hard One to Kink...and a Breeze to Unkink!

You'll find it next to impossible to kink a Tuffy sling by hand. If you succeed, even with the aid of a vise, see how easily the braided fabric can be straightened out with no material damage.

#### Tuffy's Streamlined Ferrule is Pressed On Over Tucked Eye-Splices for 100% Strength of Sling

Tremendous machine pressure swages Tuffy's smoothedged metal ferrule around the tuck splice. Metal virtually "flows" into the braided fabric interstices. This compressive treatment gives the eye of the sling 100% of the strength of the wire fabric. Eyes stay spliced!



#### Tuffy Hoist Line Delivers Big Extras of Dependability and Long Wear

Tuffy Hoist Line is a special rope construction for hoisting on all types of over-head, stiff leg and mobile cranes, derricks and clamshells. Combines extra flexibility and toughness to absorb load shocks. Tuffy slings and hoist lines work with hand-and-glove harmony to cut hoisting costs and downtime in every kind of materials handling.

Your Tuffy Distributor will help you give Tuffy Slings and Hoist Lines "the works" test on the job you choose



For Canada, Safety Supply Co., Toronto

### Give Tuffy "the Works;" then Take a Long Look at the Increase in Sling Service You Get Per Dollar



Tuffy asks no coddling. Put Tuffy slings on your toughest jobs. Give them the "full treatment" of hard service. They'll take it, and then some. And you'll be ahead in dollars saved by Tuffy's longer wear and faster handling. The secret is the patented machine-braided construction of Tuffy slings. It produces a combination of extra flexibility and extra toughness never possible with ordinary wire rope — and a big step ahead of costly hand-braided slings. This 9-part Tuffy fabric is precision-braided by machine in a way that eliminates the inequalities of hand-braiding. Tuffy Slings have no cores. Even when one of the 9 parts is cut or broken, it does not result in stranding.

#### Watch Your Men Sling Loads Faster, Easier, with Greater Safety

Tuffy fabric and Tuffy's pressed-on ferrule team up to speed up sling work. The high flexibility and kink resistance of Tuffy slings make for smooth handling, and the Tuffy ferrule makes a pulled-out splice virtually a thing of the past. Because the ends of the ferrule are swaged flush with the machine-braided strands, there are no projections to snag on loads or injure hands. No wonder handlers work faster, safer, with Tuffy slings.

|     | union (§                        | WireR                             |   |
|-----|---------------------------------|-----------------------------------|---|
| Sys | pecialists in high carbon wire. | , wire rope, braided wire fabric, | enue, Kansas City 26, Ma.<br>stress relieved wire and strand<br>TITLE |
| 3   | COMPANY NAME                    |                                   | **  |
|     | ADDRESS                         |                                   |   |
| 3.  | CITY                            | ZONE                              | STATE   |

# "Our Turbo Air Blowers were often shutdown by motor starting currents . . . until we changed to Fusetron Fuses"

"As our Turbo air blowers build up speed there is a back up pressure exerted which puts an overload on the motors. Consequently, it takes longer for the motors to gain normal running speed.

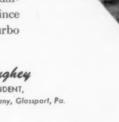
"Frequently, the 100 ampere renewable fuses we were using couldn't hold these overloads—and we would have a shutdown.

"We were anxious to eliminate these down-periods, but we didn't want to sacrifice safe fuse protection on our 30 h. p., 3600 R. P. M., 220 volt, 3 phase, 60 cycle motors that power the Turbo air blowers.

"We decided to protect these motors with 100 ampere Fusetron dualelement fuses. This move proved to be the answer to our problem. Since changing to Fusetron fuses we haven't had any trouble with our Turbo air blowers being 'knocked out' on motor starting currents."

B. D. McGaughey

ELECTRICAL SUPERINTENDENT,
Copperweld Steel Company, Glassport, Pa.



### HERE'S HOW FUSETRON FUSES PROTECT AGAINST NEEDLESS BLOWS CAUSED BY HARMLESS OVERLOADS.

Fusetron dual-element fuses will hold motor-starting currents or other harmless overloads without opening because they have a tremendous time-lag.

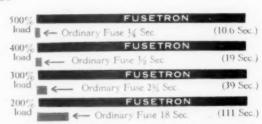
A machine may momentarily stall or be overloaded and Fusetron fuses won't open.

A motor may be started under heavy load—or all the motors on a circuit may be started at once—and Fusetron fuses won't open.

Circuits can be loaded nearer to the capacity of panelboards and switches without having Fusetron fuses open needlessly.

#### Here's a comparison of time-lag between Fusetron and ordinary fuses

Notice that even at 500% load a Fusetron fuse will hold on for more than 10 seconds—while an ordinary fuse will open in less than ¼ second. Yet, with all this time-lag, there is no sacrifice of safety.



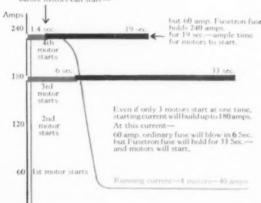
Comparison is based on ordinary fuses with the longest time-lag. Figures apply to 30 amp. 250 volt size. Opening time on larger sizes and on 600 volt sizes is longer.

Here's an example of how Fusetron fuse time-lag works

For example: take four 10 amp. motors on a circuit. 60 amp. ordinary fuses would be used to protect the circuit. BUT see what happens when four motors start at one time. The starting current of each motor is about 60 amps. so the combined starting currents would reach 240 amps.



60 amp, ordinary fuse blows in 1-4/10 Sec, before motors can start—



So with Fusetron fuses installed in Mains, Feeders and all Branch circuits—shutdowns caused by needless blowing of fuses are ENTIRELY WIPED OUT.

**Don't risk losses!** One needless shutdown . . . one lost motor . . . one destroyed switch or panel . . . one burned out solenoid . . . may cost you far more than replacing every ordinary fuse with Fusetron dual-element fuses. Write for bulletin FIS.

#### For loads above 600 amps. — Use BUSS Hi-Cap Fuses to coordinate your electrical circuits.

On 600 volts or less, BUSS Hi-Cap fuses have an in-terrupting capacity sufficient to handle any fault current regardless of system growth.

They can be coordinated with Fusetron fuses on feeder and branch circuits to limit fault outages to circuits of origin. Write for bulletin HCS.

Bussmann Mfg. Division (McGraw-Edison Co.) University at Jefferson, St. Lauis 7, Mo.

Play safe! install Fusetron dual-element fuses and BUSS Hi-Cap Fuses throughout entire Electrical System!

### How to reduce returns, cut paperwork, and make your workload lighter

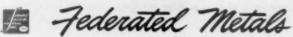


### **Buy Quality-Controlled Products and** "Quality" Service From Federated

When you buy from Federated, you can be sure you'll get exactly what you have specified. For all Federated products are produced under rigid quality-control procedures. Non-ferrous ingots are alloyed precisely to specification, and the metals you specify will be identical this year with last ... and next. Rejects and returns - and your paperwork - will be reduced.

Quality service...prompt shipments and fast deliveries of the "right" products . . . also helps you make friends with the shop, cuts time-consuming "follow-up" detail, gives you more time for the more responsible contribution you can make to your job and your company.

Next time your Federated salesman stops in, ask him about the competitive testing and quality-control of all Federated non-ferrous metals - brass . . . bronze . . . aluminum . . . zinc . . . and lead - and Federated non-ferrous supplies - solder . . . babbitts . . . plating materials . . . galvanic anodes . . . lead products. And ask about Federated's "quality" service. You'll be interested in how carefully we try to guard your interests.





AMERICAN SMELTING AND REFINING COMPANY

120 Broadway . New York 5, N.Y.

In Canada: Federated Metals Canada, Ltd., Toronto and Montreal

new products

#### Aluminum Stair Tread with Safer Footing



A precision-cast aluminum stair tread that combines safer footing for industrial workers, with longterm maintenance, has been placed on the market by Aluminum Co. of America, 1501 Alcoa Bldg., Pittsburgh 19, Pa. Designed for use in industries where stairs are subject to extreme weathering or corrosive atmospheres, the aluminum tread utilizes a slip-proof abrasive nosing.

Circle No. 43 on Inquiry Card-Page 17

### **Diminutive Dry Chemical** Fire Extinguishers



A line of portable dry chemical extinguishers, said to be the smallest available bearing Underwriters Laboratory approval, is being produced in 1 lb, 11/2 lb, 234 lb and 4 lb sizes. They

(Please turn to page 152)



### Keep cool with CIMCOOL!

Getting hot about your production schedule? Cutting problems got you in a sweat? Relax, fellow! Cool off by putting Cimcool. on the job in your plant. Cimcool Concentrate is the largest selling chemical cutting fluid in the world. Here's exactly how it can increase your production and save you money:

- **CIMCOOL LOWERS COSTS** because it's longer lasting in machines. Thus, it reduces downtime and cuts labor costs for cleaning and changing.
- cimcool does a better job because of its chemical lubricity. It permits faster speeds and feeds, for it combines friction reduction and cooling capacity in a degree never before attained by old-fashioned coolants.
- cimcool is clean, doesn't soil hands or clothing. It contains no skin irritants. It leaves no slippery film on shoes, floors, machine or work. It can't smoke, can't burn, and virtually eliminates rancidity and foul odors.

So don't fret yourself into a sweat. See your CIMCOOL distributor. He'll give you full information on *all* the advantages of CIMCOOL Concentrate—as well as details on the entire family of CIMCOOL Cutting Fluids.

Or contact us direct and we'll have one of our Cincinnati Millingtrained machinists call on you—without cost or obligation. Write, wire or telephone Sales Manager, Cincinnati Milling Products Division, Cincinnati 9, Ohio.

\*Trade Mark Reg. U.S. Pat. Off.

#### CIMCOOL CUTTING FLUIDS

- CIMCOOL Concentrate—The famous pink fluid which still covers 85% of all metal cutting jobs. Effective, economical and clean.
- CIMCOOL Tapping Compound—Permits the use of highest tapping speeds and increases tap life amazingly.
- The transparent grinding fluid with exceptional rust control. Also used for machining cast iron and as a water conditioner with CIMCOOL Concentrate.
- CIMCUT Concentrates For jobs requiring oil-base cutting fluids. Added to mineral oils, they give economical mixes for higher speeds and feeds.
- agent yet developed to overcome rancidity and foul odors.
- non-corrosive cleaner that removes grit, dirt, slime and oil.

CIMCOOL Cutting Fluids

for 100% of all metal cutting jobs

PRODUCTION PROVED PRODUCTS OF THE CINCINNATI MILLING MACHINE CO

### LIFT LOADS FASTER, SAFER with load-rated, performance-proved MADESCO BLOCKS

Born of thirty years experience, the complete line of MADESCO blocks is specifically engineered to save you time and money—no matter what you need to lift. Your industrial distributor can help you to select MADESCO blocks best suited to your job. MADESCO blocks are still to your you do not distribute to your job. available in a wide range of oval, diamond or other shapes and with single, double, triple or more sheaves. All MADESCO blocks have extra sturdy shells and fittings; sheaves have bronze, or anti-friction bearings and are precision-grooved to assure the longest rope life. Our catalogs and engineering advice are yours on MADESCO TACKLE BLOCK CO. request.





For More Information Circle No. 226 on Inquiry Card-Page 17

### POWERFUL NEW PLUNGER CLEARS CLOGGED TOILETS IN A JIFFY!



- Accordion-action design to flex at
- Double-size cup blasts double pressure, aimed directly at obstruction
- Tapered suction-grooved tail gives air-tight fit

Clear messy, stuffed toilets Cut maintenance costs with

### TOILAFLEX



Toilet ALL-ANGLE Plunger

Ordinary plungers don't seat properly. They permit compressed air and water to splash back. Thus you not only have a mess, but you lose the very pressure you need to clear the obstruction.

With "TOILAFLEX", expressly designed for toilets, no air or water can escape. The full pressure plows through the clogging mass and swishes it down.

Order a "TOILAFLEX" for your own home too. Positive insurance against stuffed toilet.

Fully Guaranteed

Order from your Supplier of **Hardware or Janitor Supplies** 

THE STEVENS-BURT CO., NEW BRUNSWICK, N. J.

A Division of The Water Master Company

For More Information Circle No. 227 on Inquiry Card-Page 17

### new products

(Continued from page 150)

are designed to combat class B and C fires. For first aid protection in a variety of industrial applications, they are more effective than equivalent and larger-size carbon dioxide and carbon tetrachloride extinguishers. The extinguishers are engineered for instant use by unskilled persons. They are a product of Leeder Mfg. Co., Inc., Briarcliff, N.Y.

Circle No. 44 on Inquiry Card-Page 17

#### Storage Unit for Parts or Blanks that Roll



A high capacity storage unit has been engineered for parts or blanks that can roll. It is designed for automated processing lines. It offers a true demandfeeding system from a controlled mobile storage medium. The principle is used to store and feed blanks for machining operations. Operation is all-pneumatic to insure trouble-free life. Each unit is custom-tailored to do a specific job and assembled from standard components. In operation, parts are guided through an "accept-reject" device and gravity fed to an elevator, from which they are positioned for a particular machine operation. It is manufactured by Michigan Tool Co., Detroit 12,

Circle No. 45 on Inquiry Card-Page 17

### ANNOUNCING

### New Thor Electric Screwdrivers and Nutsetters 100% MORE POWERFUL

25% LIGHTER



### On-the-job tests bring acclaim from users!

Thor doubled the power in the completely new "EB" series of electric screwdrivers and nutsetters—and reduced the weight by one-fourth.

The Thor "EB" series was given thorough testing before release on assembly and sub-assembly lines of appliance and electronic manufacturers. Easy handling and stepped-up power were praised by the manufacturers who put Thor "EB" tools thru the paces.

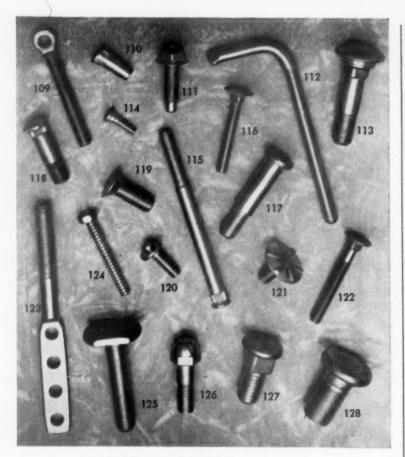
In the No. 10 capacity class, the "EB" series is available with toggle or lever switches in speeds of 500, 1000, 1500 and 2500 r.p.m. Attachments include double-slip clutch and new Thor Uni-Tork clutch for setting fasteners to a pre-determined torque.

Ball and needle-bearing construction, heavy duty gearing and quality Thor-built armatures are just a few of the 19 engineering improvements which insure long productive life from the new Thor "EB" series of tools. Your Thor distributor will be glad to demonstrate. Thor Power Tool Co., Prudential Plaza, Chicago 1, Ill.

THOR POWER TOOL COMPANY
CHICAGO

Branches in all principal cities

For More Information Circle No. 228 on Inquiry Card-Page 17



Special (B) Fasteners - Sample brochure sent upon request

### A B SPECIAL FOR EVERY JOB

Looking for a special fastener for quicker, tighter assembly, more compact design...for reducing costs while increasing strength?

(B) has them by the hundreds!

High quality specials, like those above, made to YOUR specifications. Produced accurately, and economically...shipped in time to meet tight production schedules.

For the best in fasteners . . . the best in service . . . call (B).

#### **BUFFALO BOLT COMPANY**

Division of Buffalo-Eclipse Corporation

NORTH TONAWANDA, N. V.

#### 3 convenient service centers

WESTERN OFFICE

Chicago HArrison 7-2179 EASTERN OFFICE

New York City REctor 2-1888 CENTRAL OFFICE
North Tonawanda
JAckson 2400 (Buffalo)

Many GOOD products can be made BETTER



For More Information Circle No. 229 on Inquiry Card-Page 17



#### Capacitors Dissipate Internal Heat



A complete line of power capacitors, featuring both 50 and 25 KVAR units and covering voltages from 2.4 to 7.96 kv is in production by Ohio Brass Co., Mansfield, Ohio. They feature foil cooling which is claimed to be a highly efficient method of dissipating internal heat. Meeting all NEMA and national standards for dimensions and performance, they fit into existing racks and hangers.

Circle No. 46 on Inquiry Card-Page 17



#### Ultrasonic Emulsifier Acts Faster

An entirely new principle of operation is utilized by the Sonic Engineering Corp., 146 Selleck St., Stamford, Conn., in a line of ultrasonic emulsifiers. The machines use the fluid-dynamic forces of the liquids themselves to

(Please turn to page 156)

On your purchase orders...

SHIP VI D.C. All the way

OWNOW PURCHASING AGENT

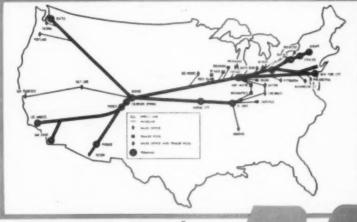
P.O.No. 9261

Specify DE

for fastest, Safest delivery and to avoid production delays!

> **NOW...**NON-STOP, STRAIGHT-THRU 2-MAN SLEEPER CAB SERVICE"

> > Coast-to-Coast!





#### TERMINALS:

NEW YORK CITY ALBANY SYRACUSE BUFFALO CLEVELAND CHICAGO ST. LOUIS

KANSAS CITY DENVER COLORADO SPRINGS PUEBLO PHOENIX LOS ANGELES SEATTLE

SALT LAKE CITY

WASHINGTON, D. C. SOUTH BEND

DES MOINES

#### OFF LINE SALES OFFICES:

\*CINCINNATI \*DAYTON \*\*FT. WAYNE \*\*INDIANAPOLIS \*\*LOUISVILLE MEMPHIS \*MILWAUKEE PORTLAND, ORE. ROCHESTER, N. Y. SAN FRANCISCO

PHILADELPHIA TACOMA PITTSBURGH TUCSON ""DE KALB, ILL. \*\*ROCK ISLAND, ILL. \*\*ROCKFORD, ILL. \*\*TOLEDO

\*With Trailer Poel

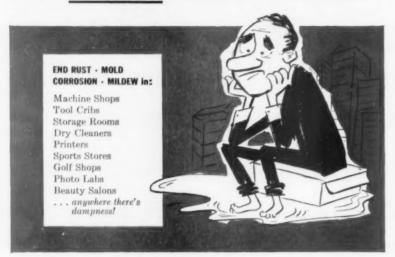
TRUCKING CO., INC.

THE ONLY COAST TO COAST CARRIER

For More Information Circle No. 230 on Inquiry Card-Page 17

### STOP

### DAMPNESS DAMAGE IN YOUR BUSINESS!



### Westinghouse ELECTRIC Dehumidifier

RATED NO. 1

DAMPNESS CAN COST YOU HUNDREDS of dollars in profits every year. Not only in damage, but customer good will. But, one low cost Westinghouse Dehumidifier lets you dry the air in a 10,000 cu. ft. area, protects valuable stores and tools from rust, corrosion, etc., ends costly production slow-downs!

RATED No. 11 In independent tests, the amazing Westinghouse Dehumidifier removed 31% more moisture at 44% lower cost than the 16 other brands tested. Uses no more current than a light bulb. Rolls on casters. 5-year replacement guarantee!

IDEAL FOR HOMES, TOO! Ends damp ruin, makes basements dry and usable! Ask your Westinghouse Appliance Dealer for a free trial or mail coupon!

### SURE ... IF IT'S Westinghouse

Refrigeration Specialties Division . Springfield 2, Mass.

| R. S. Division, Spring |   |
|------------------------|---|
|                        | re information on your De-<br>name of my nearest Dealer |
| NAME                   | TITLE   |
|                        |   |
| COMPANY                |   |
| COMPANYADDRESS         | 1.  |

For More Information Circle No. 231 on Inquiry Card-Page 17

### new products

(Continued from page 154)

produce the sound waves, instead of generating the ultrasonic energy outside the liquids. This is accomplished by impinging the liquids to be emulsified in a jet stream on the edge of a blade, vibrating at its natural frequency (about 22,000 cps). Use of the new principle has resulted in less expensive machines that are easier to maintain. Also, emulsification is faster and more complete. Circle No. 47 on Inquiry Card—Page 17

### Abrasive Belt Life Prolonged 40%



Minnesota Mining & Mfg. Co., St. Paul, Minn., has developed a new rubber contact wheel which is said to increase abrasive belt life by as much as 40%. Designed for use on backstand grinding and polishing operations, the wheel is made with an exclusive slashed serration. The new type neoprene from which it is constructed is substantially, more abrasive-resistant than the rubber compounds previously used in contact wheel manufacture. Applications of the wheel include off-hand weld removal, grinding and polishing of gates and parting lines, snagging and finishing on metal parts.

Circle No. 48 on Inquiry Card-Page 17

# PATENT APPLIED FOR

Lyon quality design is reflected in this new handle with beautifully contoured lines, finger-tip action and finished in durable chrome.

### "LYON QUALITY DESIGN makes THE DIFFERENCE!"

STEEL LOCKERS, for example. Look for the design features that pay off for years and years. Compare Lyon construction and you'll see how and why you get so much more in both durability and appearance.

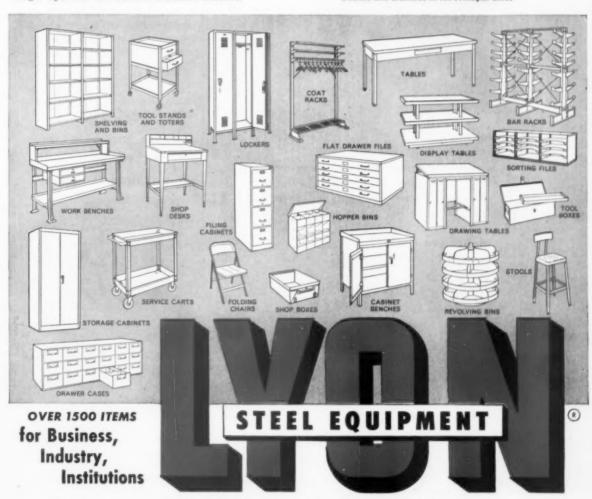
This same quality design makes the difference in every one of the more than 1500 standard Lyon items, a few of which are shown below.

CALL YOUR LYON DEALER. He offers the world's most diversified line of steel equipment. Equally important, he can show you how to get the most for your money in terms of saved time and space.

We can manufacture special items to your specifications.

### LYON METAL PRODUCTS, INC.

General Offices: 733 Monroe Ave., Aurora, III.
Factories in Aurora, III. and York, Pa.
Dealers and Branches in All Principal Cities



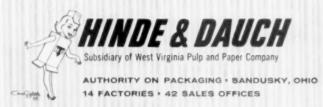
For More Information Circle No. 232 on Inquiry Card-Page 17

### "...and every fourth box is free!"



This H&D corrugated box costs only three-quarters as much as the wooden case it replaced; provides easier handling, improved identification for heavy hardware. Is cost a problem?

Better see H&D.



For More Information Circle No. 233 on Inquiry Card-Page 17

### new products

#### **Data Readout Counters**



A series of counters has been developed to perform the multiple functions of direct indication, remote indication, recording and controlling. Either electrically or mechanically actuated and offering manual or electrical reset, the units automatically create specific contact closures for each reading visually displayed. These distinct electrical circuits will furnish data for remote indication, printing or logging and remote or direct card or tape punching. They are made by Veeder-Root, Inc., Hartford 2, Conn.

Circle No. 49 on Inquiry Card-Page 17

#### **Solenoid Contactor**



Long-life, simple design and exceptional compactness characterize a line of 150-amp, standard NEMA size 4, a-c solenoid contactors being introduced on the market by Ward Leonard Elec-

(Please turn to page 162)
For More Information Circle No. 234
on Inquiry Card—Page 17→
PURCHASING



Now United Under One Banner...

to provide even better \
products and services

Fifty years of progress! A half century devoted to the manufacture of quality hand tools is climaxed by the unification of eight essential product lines. No comparable organization offers the facilities of Pendleton Tool Industries, Inc.

... seven strategically located manufacturing plants plus PTII's own coast-to-coast organization of 96 sales specialists plus 104 agents throughout the world. When you need standard or custom-types of hand tools for all industries — or parts, jigs, fixtures and equipment for the electronic and aviation industries; PTII is geared to serve you. For further information, write: Pendleton Tool Industries, Inc., Box 3519, Los Angeles 54, California.

PENDLETON
TOOL INDUSTRIES

Leadership through Quality, Service and Understanding

PROTO TOOLS

P&C QUALITY TOOLS

challenger

Front QUALITY

INTEL

CONSOLIDATED TOOL CO.

PRECISION

PROTO TOOLS

MANUFACTURING PLANTS:
Los Angeles (3),
Portland (Oregon),
Schiller Park (Chicago),
Jamestown (New York),
London (Ontorio), Canada,
Distributed throughout the world.





### Maintenance cut 49% with 5KF anti-friction bearings

**BKF** "Triple-Seal" Pillow Blocks, used by an eastern limestone producer in pulverizing tube mills, have saved thousands of dollars since their installation in 1948.

In comparable operating periods, counter-shaft failures dropped from 11 to 2, bearing maintenance costs were cut 49%, production increased 70%, power savings averaged 10% to 20%.

Required to operate in a highly abrasive "snowstorm" of powdered limestone, these triple-sealed units continue to save money for the user. They will do the same for you.

For further information on how these remarkable "Triple-Seal" Pillow Blocks can be applied most effectively to your products, get in touch with your local **BKF** Sales Office.

### Ball Bearings Cylindrical Roller Bearings Spherical Roller Bearings Tapered Roller Bearings

For More Information Circle No. 235 on Inquiry Card-Page 17

It's the NEW liquid detergent...

OAKITE

Liqui-Det

All-purpose detergent gives you

- Performance
- Convenience
- Economy

If you want the convenience of a liquid detergent... plus the famous soil-chasing power of Oakite cleaning ... plus low cost—Oakite Liqui-Det is your answer.

- PERFORMANCE Brand new Oakite Liqui-Det is a multi-purpose detergent with quick-wetting action that penetrates and loosens all the usual soils. Safe on metals, plastic, painted surfaces...and easy on the hands.
- CONVENIENCE Oakite Liqui-Det couldn't be easier to use. Goes into solution instantly in hard water or soft, hot or cold. There's no waiting, no stirring.
- ECONOMY Oakite Liqui-Det is effective in concentrations as low as ½ oz. per gallon of water. That's real economy—a thimbleful of this powerful detergent gives you a gallon of cleaning solution.

Try Oakite Liqui-Det. You'll like it. Call your local Oakite Technical Service Representative or write to Oakite Products, Inc., 54 Rector St., New York 6, N. Y.



Technical Service Regresentatives in Principal Cities of U. S. and Canada

For More Information Circle No. 236 on Inquiry Card-Page 17



(Continued from page 158) tric Co., Mt. Vernon, N.Y. They are primarily designed for use in motor starters and controllers. They may be applied as main line, accelerating or reversing contractors, also, to control heater and lamp loads. Heavy inrush currents are handled by silver-cadmium-oxide main contacts without welding or excessive pitting. Coil voltages are 110, 220, 400, and 550 at 25 or 50/60 cycles.

Circle No. 50 on Inquiry Card-Page 17

#### Pillow Block Bearings Seat Solidly



A line of spherical roller bearing pillow blocks incorporates a unique mounting feature which makes it possible to seat the bearings on shafts solidly and easily. This is accomplished through use of set screws located parallel to the bore in the adapter nut. After the bearing is snugged up with the adapter nut, adjustment is completed by turning the screws of the mounting against the locking washer, until bearing, adapter and shaft form an integral unit. According to the manufacturer, Dodge Mfg. Corp., Mishawaka, Ind., the pillow blocks are ideal where alingnment and easy installation are wanted.

Circle No. 51 on Inquiry Card-Page 17

PLEASE USE
INQUIRY CARD—PAGE 17

### How does ESNA's <u>complete</u> line turn your special hex nut requirements into standard parts?









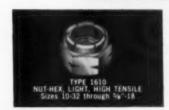


What happens when design or production requires a variation on a standard self-locking hex nut? Can you find a source quickly and economically? You can if you call on ESNA, because ESNA's standard line of hexagon nuts includes hundreds of dimensional, material and tensile variations. Probabilities are that one of them will meet your requirements.

Every nut illustrated here is a standard part. They range in size from a sub-miniature 0-80 thread that is only .107" across the flats to a 4"-4 thread that is 61%" across. Thread series include SAE, USS and British BSF, BA and Whitworth series. Most are available in carbon steel, stainless, brass, and aluminum. The locking effectiveness of the red locking collar of an Elastic Stop nut has been tested and proved by more than thirty years of actual field service on locomotives, pile drivers, oil drilling machinery and washing machines, truck and tractors. Elastic Stop nuts do not gall or seize bolt threads; they can be re-used many times.

These standard ESNA hex nuts are available from stock or are produced under normal lead times. And, of course, additional hundreds of "specials" are also available. The next time you need either a standard or an unusual hex nut call ESNA, the company that makes the most complete line of self-locking nuts available to American industry.

For details on the Elastic Stop® nuts shown here, write Dept. N43-716.







### ELASTIC STOP NUT CORPORATION OF AMERICA

2330 Vauxhall Road Union, New Jersey





### engineering for instance

Each day, our engineers suggest slight changes which eliminate higher tooling costs or additional operations on our customers' stampings.

Usually this speeds delivery time . . . another *plus* which alone justifies most differences in original quoted prices!

On your next stamping requirement, look for this plus beyond the price . . . engineering . . . and let us see your prints before you buy!



A brochure is yours for the asking!

### COMPANY

Established 1915

408 Midland Ave., Detroit, Mich.

"America's Leading Job Stamping Manufacturer"

Look to Detroit!

For More Information Circle No. 238 on Inquiry Card—Page 17

### new products

#### Stored Energy Mechanism Breaks Circuits



To operate magne-blast circuit breakers with metal-clad switchgear, a stored energy mechanism is announced by General Electric, Medium Voltage Switchgear Dept., Schenactady 5, N.Y. The equipment, which receives its energy from a small operating motor, is suited for general application on industrial and electric utility power systems. It is available in voltage ratings from 4.16 to 13.8 kv and interrupting ratings from 150 mva to 750 mva inc. It is ideal where it is desirable to provide only a limited source of a-c or d-c closing power. Circle No. 52 on Inquiry Card-Page 17

#### Gasoline-Powered Fork Truck



Mercury Mfg. Co., Chicago, Ill., is marketing a gasoline-powered fork truck of 4000 lb capacity, which is easy to operate and (Please turn to page 166)





### DIVIDED WHEELS Generally used as dolly, tail







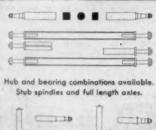












Our Engineers Invite Your Inquiries

ELECTRIC WHEEL COMPANY
DIVISION OF THE FRESTORE TIRE & RUBBER COMPANY
2804 SPRUCE - QUINCY, ILLINOIS

For More Information Circle No. 239 on Inquiry Card—Page 17 PURCHASING



Another STANLEY STEEL STRAPPLICATION® on the job

### Don't man-handle products and lose money ... "UNI-TIE" and Save!

The more your products are handled manually, piece by piece, in packaging, storing, loading and unloading, the more chance for product damage. And "man-handling" takes longer and costs more than mechanical handling. This Syracuse company now "Uni-Ties" its precision castings to pallets with Stanley Steel Strapping, "eliminating the need for costly containers, cutting packaging time 50% and effecting important savings."

"Uni-Tieing" makes ONE unit out of many, making it possible to handle products by mechanical means from packaging to customer. Let the "Uni-Tieing" Method help you.

WRITE FOR YOUR FREE COPY of the "Stanley Strapplication Manual of Packaging and Shipping" to STANLEY STEEL STRAPPING, Division of The Stanley Works, Dept. G, 876 Lake Street, New Britain, Conn.

\*The system-atic way to solve specific packaging and shipping problems





INSURE IT-SECURE IT WITH STANLEY STEEL STRAPPING

AMERICA BUILDS BETTER AND LIVES BETTER WITH STANLEY



This famous trademark distinguishes over 20,000 quality products of The Stanley Works—hand and electric tools - drapery, industrial and builders hardware - door controls - aluminum windows - metal parts - coatings - steel and steel strapping—made in 24 Stanley plants in the United States, Canada, England and Germany



MAINTENANCE COSTS ARE LOWER, repainting jobs fewer and farther between—even in the most corrosive spots—when you use aluminum paint...especially paints made with Reynolds Aluminum Pigment fortified with Strontium Chromate.

Strontium Chromate gives aluminum paint added rust-and-corrosionproofing power. It's an extra, builtin inhibitor that makes one-coat paint jobs last longer, reflect heat better, protect better.

So, to: (1) cut maintenance costs (2) guard against corrosion and rust (3) retard evaporation of volatiles (4) reduce metal heat expansion (5) reflect heat and light to keep temperatures down...ask your supplier for paints made with

Reynolds Aluminum-Strontium Chromate Pigment. Or write for names of manufacturers.

#### Coat Your Roof With Aluminum... For Lower Upkeep, Cooler Buildings

When you coat your roof with an asphaltaluminum roof paint or coating, you're putting on a maintenance cutting shield of metal. And, because aluminum reflects heat, you'll keep your plant as much as 15° cooler. Look for this Warranty Seal on Asphalt-Aluminum roof coatings. It guarantees an approved vehicle and at least two pounds of pure aluminum pigment in every gallon.



"By the makers of Reynolds Wrap"
Watch for Reynolds "CIRCUS BOY," Sundays, NBC-TV

| The Finest Paints  | Reynolds Metals Compa<br>P. O. Box 1800-PP, Loui<br>Please send me informa | ny<br>sville 1, Ky.<br>ution on: |
|--|--|----------------------------------|
| Made with Aluminum   | Aluminum Paints  | Roof Coatings                    |
| are made with  | Name   |                                  |
| REYNOLDS 🕮 ALUMINUM  | Company  |                                  |
| PIGMENT  | Address  |                                  |
| The same of the sa | City   | Zone State                       |

For More Information Circle No. 241 on Inquiry Card-Page 17



(Continued from page 164)

maintain. There is easy access to operator from either side of truck. Control valves provide precise direction of hoist and tilting operations. The truck is available with either 2 to 1 ratio or 3 to 1 ratio (for extra high freelift) hoist systems. Both types employ one single acting low pressure cylinder which elevates the lifting element and forks, The truck can be converted to LP gas operation, if desired.

Circle No. 53 on Inquiry Card-Page 17

#### Silent Floor Machine Maintains Large Areas



Designed for maintenance of large areas that require daily attention, a floor machine comes equipped with 50 ft of cable and two 20" diam brushes, one for scrubbing and the other for polishing. The manufacturer, Huntington Laboratories, Inc., Huntington, Ind., has furnished it with its special micro switch, which can be operated by either hand, eliminating hand fatigue. Its 1 hp motor operates at 110-220 v, 60 cycles a-c. Silent in operation, it polishes, scrubs, snads, seals, steel wools and shampoos floors.

Circle No. 54 on Inquiry Card-Page 17

For More Information Circle No. 242 on Inquiry Card—Page 17-> Purchasing Available through your...





## new thermocouple is spring loaded to maintain continuous contact

This new Honeywell thermocouple keeps in continuous contact with the work surface, even though the surface may expand, contract or become displaced during operation. It assures accurate temperature measurement of internal surfaces such as those of plastic extrusion machines or generator bearings.

The tip of the thermocouple is held securely against the work surface by an Inconel-X spring. Moreover, the spring permits insertion of the thermocouple in holes varying up to  $\pm~\%''$  from the specified depth.

For easy inspection and replacement, the thermocouple assembly is provided with a bayonet adapter to fit a  $\frac{1}{8}$ % NPT pipe connection. The assembly itself is fitted with a corresponding cap to engage this adapter.

Call your nearby Honeywell Supplies Man for complete details. He's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR Co., Industrial Division, Wayne and Windrim Avenues, Philadelphia 44, Pa.—in Canada, Toronto 17, Ontario.



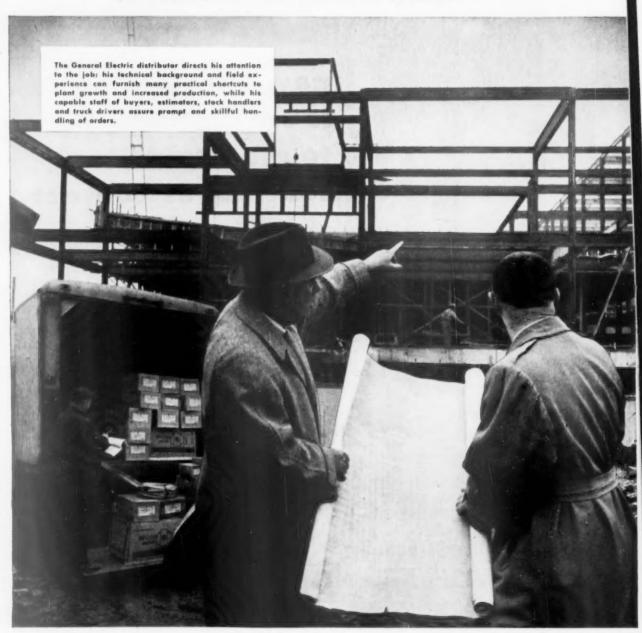
Honeywell

First in Controls

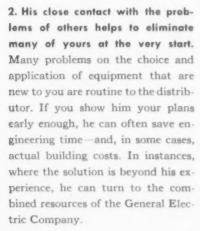
Available in either straight or 90° angle construction for ease of installation.

### How General Electric Apparatus Distributors help you plan for growth

The training, experience and resources of your G-E distributor can make plant expansion easier, faster and more economical



1. The distributor knows the shortcuts that can save dollars on equipment and installation costs. Your
General Electric distributor knows
the electrical business: his past experience, his thorough training in
General Electric schools, his supply
of up-to-date buying information
and his day-to-day contact with the
practical problems of his trade provide him with a knowledge of the
best way to apply and install electrical equipment. And he brings this
acquired "insight" to your problems.



3. The distributor offers important advantages of "one-stop buying." His well-stocked warehouse gives you an almost unlimited choice of



Not a moment is lost in filling your order.



Equipment is delivered on time.

the most modern electrical equipment—most of it on demand or 24-hours shipment. The specials that he does not have, he can quickly get through immediate contact with General Electric factories. In the case of hard-to-find needed-at-once items, the distributor's knowledge of the local market can often uncover the product you want in a hurry, saving you time and often, money.

4. The time to use the distributor's dollar-saving services is in the beginning. In the planning stages, he provides new equipment data, prices and special application information

for estimate purposes. He works closely with your architect, contractor or consulting engineer. Should special problems arise, he calls in G-E specialists to help you. Thus, the distributor's service, properly used, can relieve you and your technical staff of many costly, time-consuming operations.

To make the most of your distributor's services, have a talk with him; let him show you how he can help you plan for growth. If you don't know your distributor's name, write National Manager, Distributor Sales, General Electric Company, Schenectady 5, New York.



"On site" suggestions can often save time

#### These Are Some of the Products Sold by General Electric Apparatus Agents and Distributors

- · fractional-hp motors
- e gear-motors 1/4 to 100 hp
- distribution and power transformers
- · instrument transformers
- arresters
- CLF fuses
- cutouts
- · electric instruments

- time switches
- heaters and soldering irons
- watthour meters and sockets
- air circuit breakers
- switchgear
- rectifiers
- capacitors
- substations
- Inductrol\* voltage regulators
   \*Trade-mark General Electric Co.

### Progress Is Our Most Important Product

GENERAL



ELECTRIC



The Ridge Tool Company, Elyria, Ohio, U.S.A.



For More Information Circle No. 244 on Inquiry Card-Page 17

### new

#### Position Lock Secures to Uneven Floors



Designed for castered trucks, scaffolds, and other mobile equipment, a position lock produced by the Bassick Co., of Bridgeport, Conn., insures secure holding even on uneven floors. It incorporates a kick release bar as standard equipment. With the new construction, an easy downward pressure on pedal sets the "shoe" securely in contact with the floor and a downward pressure on the kick bar releases the lock. The position lock can be used on mobile benches, tool stands, conveyors, work stands, floor trucks and scaffolds.

Circle No. 55 on Inquiry Card-Page 17

### **Comparator Detects Minutest Variations**



Federal Products Corp., Providence R. I., states that variations as small as one-millionth of an inch can be detected with a newly (Please turn to page 172)

### The news is really sizzling about...





### PROGRESSIVE's Customized



### FASTENERS

Now you can get from PROGRESSIVE, these fasteners with an extra customized touch — fasteners which are custom-made to your order. This means: (1) specifically made for you — not bin stock parts; (2) fast, custom-handling of every order; plus (3) the double economy of low initial cost and the savings in your assembly operations possible only with high precision, torsion-tested fasteners.

STANDARDS AND SPECIALS CUSTOMIZED FOR YOUR NEEDS

#### THE PROGRESSIVE MFG. CO.

DIVISION OF THE TORRINGTON COMPANY

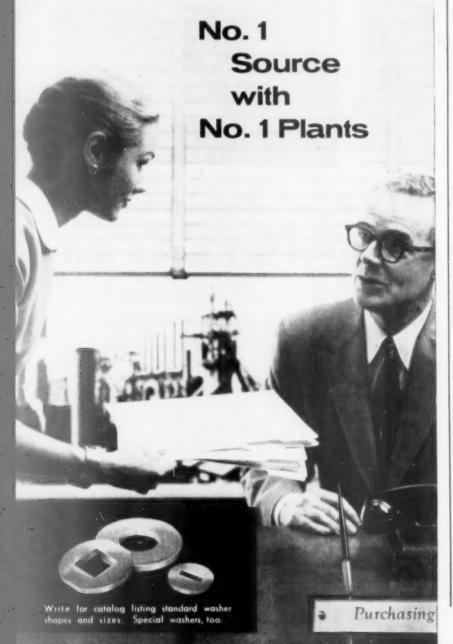
56 Norwood Street, Torrington, Connecticut

For More Information Circle No. 245 on Inquiry Card-Page 17

### JOLIET

First for Quality — Modern automatic machines backed by rigid quality-control procedures assure you of uniform, high-level quality. Joliet is the world's foremost producer of washers — any sizes, any metal, any quantity.

JOLIET WROUGHT WASHER COMPANY . Joliet, Illinois





(Continued from page 170)

introduced electronic comparator. Originally built to measure precision ball bearings, it is completely adjustable and may be used for parts of various shapes and sizes. The gage consists of three parts, an electronic amplifier, an, indicating meter and an electronic gage head with an adjustable column to permit vertical positioning of gage head assembly. Four magnifications can be selected from 60,000 to 1 to 2,000 to 1.

Circle No. 56 on Inquiry Card-Page 17

#### Woven Industrial Glove



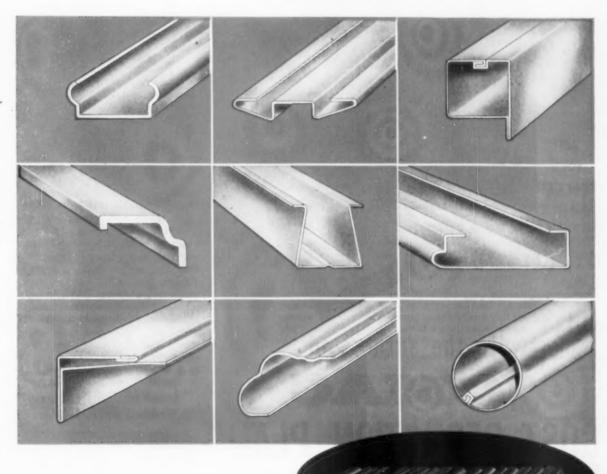
Riegel Textile Corp., Conover, N.C., is manufacturing a new double palm and chore industrial glove made with 18 oz flannel, replacing laminating and quilting. These gloves, the only ones manufactured in this manner. are expected to wear longer than laminated or quilted gloves and are more comfortable because of the elimination of bulky seams. They are dved green to follow the dress-up trend evident today in all work clothing. The line includes a knit wrist chore glove. as well as knit wrist, safety cuff, and gauntlet double palm gloves.

Circle No. 57 on Inquiry Card—Page 17
For More Information Circle No. 246
←on Inquiry Card—Page 17



### NCREASE YOUR PRODUCTION WITH ROLL FORMED SHAPES

... carbon, galvanized and stainless steel; aluminum, copper, brass, zinc and clad metals delivered accurately punched, notched, bent and cut for final assembly.



Let us help you increase production and lower costs. It can be done simply by changing to Roll Formed shapes which are formed, notched, pierced and cut to length in one continuous operation. We meet your most exacting specifications. Our accuracy cuts valuable man-hours from your final assembly costs. We're equipped to deliver Roll Formed shapes

ROLL FORMED PRODUCTS

up to .125" thickness on schedule by the hundreds of thousands. Send your sketch or blueprints for prompt quotation. For details on our production facilities and techniques, ask for Catalog No. 1555. Do it today!

MAIN OFFICE AND PLANT . 3753 OAKWOOD AVE. . YOUNGSTOWN, OHIO

### you can cut your GLOVE COSTS



with the authorized

### COST-REDUCTION PLAN

- 1 Jomac will analyze your working conditions and glove requirements
- 2 You will receive a complete report and specific Jomac Glove recommendations
- 3 Test and compare the Jomacs with your present gloves—and the net cost figures speak for themselves

Your glove costs can be reduced. To make profitable use of this plan, write to Jomac Inc., Dept. F, Philadelphia 38, Pa., and say "Reduce my glove costs."

### JOMAC INDUSTRIAL GLOVES

Plants in Philadelphia, Pa., and Warsaw, Ind. In Canada: Safety Supply Company, Toronto

For More Information Circle No. 248 on Inquiry Card-Page 17



This Silicone Rubber the Strongest Ever!



Claimed as the strongest, toughest heat-stable type ever developed, a new silicone rubber stock, "Silastic 916," combines the thermal stability and high dielectric properties of silicone rubber with the mechanical strength and abrasion resistance that approaches that of organic rubber. Its useful temperature range extends from -130 F to over 500 F. Suggested applications include oven door gaskets, aircraft door seals, wire and cable coatings. It is a product of Dow Corning Corp., Midland, Mich.

Circle No. 58 on Inquiry Card—Page 17

#### Dual Shield Process Welds Faster, Better



A welding process that introduces dual shield flux-core electrode in economical and effective combination with shielding carbon dioxide gas has been devel-

(Please turn to page 176)

For More Information Circle No. 249
on Inquiry Card—Page 17→
Purchasing







### ANOTHER DRIVE REQUIREMENT MEETS ITS MASTER

You look at a motor application in an ad, and 99 times out of a hundred first thing you say is, "But my problem's different." Here, it's 100 to one you'll be right.

Point is the manufacturers of this fast, efficient and extremely ingenious dry cleaning storing mechanism told Master what they needed. Light, geared-down, steady power, full start, positive stop. And whenever the attendant in a progressive shop so equipped dials your pants, a Master Gearmotor delivers the goods.

And Master can deliver the goods for you! Master components can be integrated in any combination to give you the right horsepower, right shaft speed, right mounting features, in a single, efficient compact unit. See Master for your drives!

plosion-proof, special purpose.

Specds\_\_\_\_\_\_Single-speed, multi-speed, and variable speed.

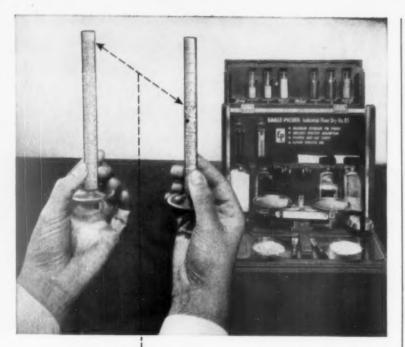
Installation Horizontal and vertical, with or without flanges
Power Drive and other features.
Features Electric brakes (2 types) —5 types of gent re-

Electric brakes (2 types)—5 types of gear reduction up to 432 to 1 ratio. Mechanical and electronic variable speed units—fluid drives—every type of mounting.

MASTER ELECTRIC MOTORS

At the touch of a switch, unit rotates and indexes correct order to delivery position. It's fast, accurate and multiplies floor space efficiency. Power is a ½ H.P., 115/230 volt, 60 cycle, I phase Master Right Angle Gearmotor.





There's a BIG difference in floor absorbents

### TEST IT Yourself!

IN YOUR OWN OFFICE, make this simple 15-minute test. Compare Eagle-Picher Industrial Floor-Dry to any other floor absorbent.

HERE'S WHAT YOU'LL PROVE TO YOURSELF about safe, skidproof Eagle-Picher Floor-Dry: It's extremely insoluble, absorbs more oil and water. It goes further, provides much greater coverage. It reflects more light, brightens the work area. It's non-combustible, has no chemical reaction. It lasts longer, saves you money!

Since 1843



WRITE TODAY. Our Eagle-Picher representative will bring the portable laboratory to your office where you may make this test yourself. The Eagle-Picher Company, Cincinnati 1, Ohio.



For More Information Circle No. 250 on Inquiry Card-Page 17



(Continued from page 174)

oped for arc welding faster and better at lower cost. It deposits weld metal three to twelve times faster than manual stick electrode welding and at least 33% faster than established semi-automatic methods. The process gives the metal working industry sound low cost welding of any type of mild steel, according to its developers, National Cylinder Gas Co.

Circle No. 59 on Inquiry Card-Page 17

#### Miniaturized Thread Inserts



A miniaturized series of selflocking wire thread inserts is now available for meeting a design need over a wide range of small, precision applications. The inserts answer problems raised by space and weight limitations in fastening work on electronic, automotive, machine tool and instrument assemblies. They are ideal in miniature subassemblies where clearance or inaccessibility does not permit use of external locking devices. According to the manufacturer, Heli - Coil Corp., Danbury, Conn., the screw locks dispense with lock-washers, nut, wires with an integral gripping coil.

Circle No. 60 on Inquiry Card-Page 17

FOR MORE INFORMATION
ON PRODUCTS IN
THIS ISSUE
USE INQUIRY CARD—PAGE 17

For More Information Circle No. 251 on Inquiry Card—Page 17→ PURCHASING









indoors or out—
the accent is STAINLESS
the meaning is PROFILE





# mouldings Superior Stainless

STRIP STEEL



The bright world of applications for mouldings of Superior Stainless tells the story fast: wherever these mouldings are used, profit is part of the picture! Profit in fabrication, through Superior's uniform ease of working . . . profit in sales, from outstanding value appeal . . . profit in customer satisfaction, which builds more business! • Let us send you the Superior Stainless Strip Steel Brochure.

## Superior Steel

CARNEGIE, PENNSYLVANIA



#### Introducing the NEW, BIGGER 56 HP. Model VR4D WISCONSIN Air-Cooled ENGI

4-CYLINDER



• Climaxing years of engineering development, this great new engine offers manufacturers and users of power equipment all the advantages of AIR-COOLING, at temperatures from low sub-zero to 140° F., in an exceptionally rugged engine that measures up to any "heavyweight"

industrial type liquidcooled engine, horsepower for horsepower, with many plus values.

The outstanding High Torque characteristic of the Model VR4D engine,

combined with its extremely rugged construction and heavyduty stamina, provide load-lugging holding power, long life and top pow-

er performance, Advanced "V" design pro-

vides an extremely compact power package, plus all traditional Wisconsin heavy-duty features such as tapered roller main bearings. This new engine rounds out a complete line, comprising 15 models in 4-cycle single cylinder, 2- and 4-cylinder sizes, from 3 to 56 hp. Write for "Spec" Bulletin 5-207.



#### NSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines MILWAUKEE 46, WISCONSIN

For More Information Circle No. 252 on Inquiry Card-Page 17

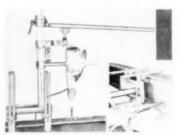


BUY AMERICAN... Tubular and Split Rivets...

For More Information Circle No. 253 on Inquiry Card-Page 17



#### Radial Drill Handles Anything. Anywhere



Designed for drilling anything, anywhere, a portable radial drill press eliminates the necessity for handling large pieces, for bringing heavy, unwieldy tools to the job or for turning the work to be drilled, countersunk or tapped. Ideally suited for steel erection, all types of construction and general maintenance, the drill was designed by Lance Iron Works. Box 310R3, Chicago Heights, Ill., so that it cannot fall off a workpiece under any circumstances. Controlled by one man, it swings in a 360 degree radius.

Circle No. 61 on Inquiry Card-Page 17

#### Caster Swivels, Rolls With Minimum Effort

Timken tapered roller bearings and self-contained ballrace have been incorporated by the Faultless Caster Corp., Evansville, Ind., into their HX300 series of casters that handle loads up to 5 tons. A combination dust guard and grease seal fully protects lower bearing from dirt, water and chemicals and retains lubricant. The upper swivel bearing is also completely enclosed. An adjustable slotted nut provides for 30° turn lateral adjustment in swivel "take up." The caster is heavily proportioned throughout with extra strength at vital points.

Circle No. 62 on Inquiry Card-Page 17

## TAYLOR

Laminated Plastics Vulcanized Fibre:

# Shop Talk

TAYLOR FIBRE CO.

Plants in Norristown, Pa. and La Verne, Calif.

PHENOLIC-MELAMINE-SILICONE-EPOXY LAMINATES . COMBINATION LAMINATES . COPPER-CLAD LAMINATES . VULCANIZED FIBRE

#### Tips for designers



Rollers for sliding drainboards of double drain sinks are made of Taylor Grade L phenolic laminate, have high impact strength and resistance to wear.



House trailer interior walls are made of plywood faced with Taylor vulcanized fibre, chosen for its combination of light weight and high strength.



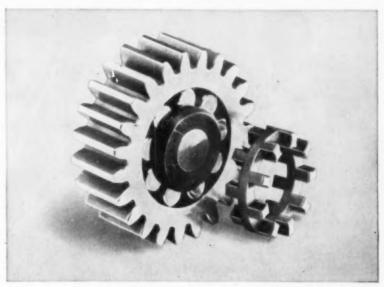
Fan blades can be fabricated from Taylor Grade C-7 post-forming laminate . . . have excellent physical strength and operate quietly.



Terminal strips for high-precision electronic instruments benefit from the excellent insulating properties of Taylor XXXP-301 hot-punch laminate.

#### TAYLOR SUPERIOR COPPER-CLAD LAMINATES

Taylor GEC (glass epoxy) Copper-Clad and Taylor XXXP-242 cold punching (paperphenolic) Copper-Clad. Taylor uses high purity rolled copper on base materials with outstanding electrical properties.



Roller bearing cage, used by Steel Products Engineering Co., division of Kelsey-Hayes Wheel Co., is fabricated to very close tolerance by Taylor... of Grade L phenolic resin. This material provides good machined edges, wearing qualities and impact-fatigue strength.

# Need accurate laminated plastic parts? Taylor can do the job for you.

This roller bearing cage posed a problem in both material selection and fabrication. It had to have high impact-fatigue strength and good wearing qualities, and it had to have edges and inside diameter machined to extremely close tolerances. Taylor Grade L phenolic tubing proved to be the right material, and Taylor's Fabrication Division solved the production problem.

Many manufacturers have found the answer to their fabrication and assembly difficulties with the help of this Taylor facility, by having parts supplied completely fabricated to specified tolerances, ready for final assembly. With specialized equipment and advanced techniques, Taylor is prepared to simplify production problems, safeguard delivery schedules, and eliminate inventory headaches.

Chances are that you have a product design job on hand right now that Taylor can produce to the close tolerances you need. And Taylor can deliver it quickly and economically to your exact specifications.

Taylor's fabricating facilities and engineering staff are at your service. Contact your nearest Taylor sales engineer for a discussion of your particular requirements.



# Acco's great VHS Wire Rope is 15% stronger ...it's tougher too, and lasts longer

The letters vhs stand for Very High Strength and for acco's sensational new wire rope—hailed by users as the strongest, toughest and longest-lasting wire rope they have ever used!

Proved 15% Stronger. By actual laboratory tests, vits Wire Rope has 15% greater tensile strength than Improved Plow Steel, previously the highest-rated standard wire rope. It is the result of years of development by Acco's engineering and research staff, and is made of a new grade of rope wire by Acco's own process.

VHS Wire Rope is so much stronger that heavier loads can be handled by the same size rope, and often smallersized rope will handle equal loads.

Tougher...Lasts Longer. In addition to

its unprecedented strength, VHS Wire Rope has extra toughness and extra resistance to wear. It stands up longer under the abuse which wire rope must take in the most punishing services.

vhs Wire Rope keeps its flexibility; it resists compacting under pressure. These qualities, plus greater strength and toughness, add up to a longer life of safe service. Users across the country report that vhs Wire Rope lasts far longer—often twice as long—as the best ropes they previously used.

VHS Means Economy. Because of its long, trouble-free service life, vhs effects substantial economies through savings in operating costs. There is less down-time on equipment where vhs Wire Rope is used.

Wide Range of Uses. In the construction, logging, mining and petroleum industries especially, vhs Wire Rope has established its definite superiority. It stands up remarkably well in such applications as drag-lines, shovel hoist ropes, slusher ropes, logging chokers, rotary drilling lines, scraper ropes and others.

A Typical ACCO Better Value. VHS Wire Rope is a shining example of ACCO's program of serving American business and industry by offering better values through constantly improving its products, and by creating new ones where need exists. The ACCO divisions and their products are listed on the opposite page.

#### Why Acco products mean better values

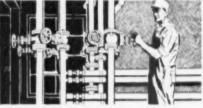
Our research, designing and manufacturing facilities are devoted to making Acco products "intentionally better" in on-job performance. Year after year, reorders from our customers attest Acco's Better Values.

#### BELOW ARE ILLUSTRATED A FEW OF THE MANY OTHER ACCO PRODUCTS



#### NEW ACCO ALUMINIZED WIRE

has aluminum coating bonded to steel wire; is strong, corrosion-resistant. Available for Strand, Chain Link Fence, Telephone Wire, other purposes.



Satisfied users say R-P&C also stands' for Reliable Protection & Control. Bronze, iron, steel and bar stock valves.



#### WRIGHT HOISTS

SPEEDWAY electric hoists are ideal lifting units for loads from 1/4 to 10 tons. Fully dependable. Easiest to service.



#### ACCO REGISTERED SLINGS

ACCO is the only source for both chain and wire rope slings. The ACCO Registration assures the utmost in safety and efficiency.

#### Below is a list of major Acco products and Acco Divisions

#### ABBASIVE CUTTING WHEELS

Rubber and Resinoid Bonded

ALLISON DIVISION

**BOLTS and NUTS - Lag Screws and Forgings** THE MARYLAND BOLT and NUT COMPANY

#### CASTINGS

Electric Furnace Steel and Iron . Malleable Castings ACCO STEEL CASTING DIVISION ACCO MALLEABLE CASTING DIVISION

Weed Tire Chains • Acco Registered Sling Chains Welded and Weldless Chain and Attachments AMERICAN CHAIN DIVISION

#### CUT-OFF MACHINES

Abrasive Cut-Off Machines . Nibbling Machines CAMPBELL MACHINE DIVISION

#### CONTROLS

Tru-Lay Push-Pull Controls . Brake Controls Aircraft Cable . Tru-Stop Brakes for Trucks and Buses AUTOMOTIVE and AIRCRAFT DIVISION

GAGES . Pressure, Vacuum and Compound HELICOID GAGE DIVISION

HARDNESS TESTERS . "Rockwell" and TUKON WILSON MECHANICAL INSTRUMENT DIVISION

#### HOISTS and CRANES

Wright Chain Hoists . Electric Hoists . Cranes WRIGHT HOIST DIVISION

Ford Chain Hoists . Electric Hoists . Trolleys FORD CHAIN BLOCK DIVISION

#### INSTRUMENTS

Automatic Controls, Recorders, Telemeters, Socket Screws, Choppers and High-Speed Relays, Aircraft Pressure-Operated Devices

#### THE BRISTOL COMPANY LAWN MOWERS

Rotary and Reel-type Power Mowers . Hand Mowers PENNSYLVANIA LAWN MOWER DIVISION

VALVES - Bronze, Electric Furnace Iron and Cast Steel R-PAC VALVE DIVISION

WIRE, FENCE, WELDING WIRE Manufacturers Wire . Shaped Wire Chain Link Fence . Welding Wire

#### PAGE STEEL and WIRE DIVISION WIRE BOPE

Tru-Lay VHS Preformed Wire Rope • Tru-Loc Assemblies Acco Registered Wire Rope Slings

AMERICAN CABLE DIVISION

Lay-Set VHS Preformed Wire Rope • Tru-Loc Assemblies Acco Registered Wire Rope Slings HAZARD WIRE ROPE DIVISION

IN CANADA: DOMINION CHAIN COMPANY, LIMITED Miagara Falls, Ontario

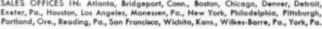
THE BRISTOL COMPANY OF CANADA LIMITED Toronto, Onterio

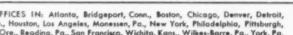
IN ENGLAND: SEITISH WIRE PRODUCTS, LIMITED THE PARSONS CHAIN COMPANY, LIMITED

For Information on any ACCO product, address Market Development Department, American Chain & Cable Company, Inc., 929 Connecticut Avenue, Bridgeport, Connecticut

#### American Chain & Cable Company, Inc.

SALES OFFICES IN: Atlanta, Bridgeport, Conn., Boston, Chicago, Denver, Detroit, Exeter, Pa., Houston, Los Angeles, Monessen, Pa., New York, Philadelphia, Pittsburgh,





2 Acco brands

Lay-Set VHS

Tru-Lay VHS

... buy either

These great new wire

ropes are now available

everywhere from Hazard

LAY-SET or American

Cable TRU-LAY distrib-

utors. Both are Acco-

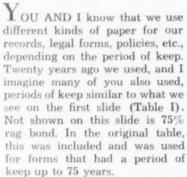
made-both are Acco

Better Values.

# Selection of Fine Papers

By Lewis S. Reid, General Purchasing Agent, Metropolitan Life Insurance Company, New York, New York

An Address Delivered at N.A.P.A. Convention in Atlantic City, N. J.



About five years ago, we revised this table as follows

| this table as follows: |     |       |
|------------------------|-----|-------|
| 100% rag bond          | 100 | years |
| 50% rag bond           | 50  | years |
| Sulphite bond          | 30  | years |
| 100% rag ledger        | 100 | years |
| 50% rag ledger         | 50  | years |
| Sulphite ledger        | 20  | years |

Today, I feel pretty sure that we could again change this table as follows:

100% rag bond Over 100 years 50% rag bond Up to 100 years Sulphite bond Up to 50 years

The same goes for the ledgers and the index papers.

What has happened and is happening to allow us to increase the years of these papers, which in effect let's us put our records and forms on lower rag content paper or on sulphite paper when, 20 years ago, we put them on higher rag content paper or on lower rag content paper?

I am going to show three slides and talk briefly about the specifications of the paper with laboratory control and without this control; secondly, the longevity to be expected from these papers based on twenty-year tests; and finally, other factors which tend to reduce the necessity for long-life paper.

The first slide (Table II) shows a specification for 50% rag bond

paper. You will note that the 1equirement for the stock is that it the remainder free from unbleached or groundwood pulp. The being 5 for white and 4.7 for color paper. A maximum allowance for rosin is indicated as 1.5. Then requirements for physical strengths, bursting, and folding are specified, followed by a requirement for opacity. We have later added to this specification a requirement

## should be not less than 50% rag, four weights are given; 13 lb., 16 lb., 20 lb., and 24 lb. The maximum ash allowance of 6% is given so that the paper is not filled up with excessive mineral content, cutting down on the fibre content. Then a minimum pH is specified,

#### TABLE II 50% RAG BOND, WHITE AND COLORED Parchment Finish SPECIFICATIONS

| Stock: Not less than 50 percent rag;     | the remain    | der free fro | m unb   | leached or |
|--|---------------|--------------|---------|------------|
| ground wood pulp.<br>Weight: 17 x 22/500 | 13 Lb         | . 16 Lb.     | 20 Lb   | . 24 Lb.   |
| Ash: Maximum percent                     |               | 6            | 6       | 6          |
| Aciditan all Minimum ( White             | 5.0           | 5.0          | 5.0     | 5.0        |
| Acidity: pH—Minimum   White   Colore     | d 4.7         | 4.7          | 4.7     | 4.7        |
| Sizing: Tub-sized. Rosin-                |               |              |         |            |
| Maximum percent                          | 1.5           | 1.5          | 1.5     | 1.5        |
| Bursting Strength: Minimum point         | s 26          | 32           | 40      | 48         |
| Folding Endurance: Double folds, av      | -             |              |         |            |
| erage each direction-Minimum             | n 200         | 240          | 300     | 360        |
| Opacity: Contrast ratio-Minimum          | O.            |              |         |            |
| per cent                                 | 79            | 84           | 89      | 93         |
| Ruling, Writing, and Erasing Qua         | lities: Shall | be suitable  | e for r | uling and  |

writing on with black and red ink and have good erasing quality. Color, Finish, Formation, and Cleanliness: Deliveries must be air-dried; conform to the standard sample in finish, formation, and cleanliness; and match in color the sample furnished with the order.

#### TABLE I

|  | A  |
|--|--|
| Bonds<br>100% Rag<br>50% Rag<br>Sulphite   | Longevity<br>100 years or more<br>50 years<br>15 years |
| Ledgers<br>100% Rag<br>50% Rag<br>Sulphite | 100 years or more<br>50 years<br>15 years              |
| Index<br>100% Rag<br>50% Rag               | 100 years or more<br>50 years                          |

for minimum brightness, this being in the case of this paper, 82. Final requirements cover ruling, writing, and erasing qualities and color finish, formation and cleanliness. Of course, a complete specification such as this cannot be used unless some means are provided to check deliveries to the specification, such as either a laboratory connected with the business or the payment of fairly large testing fees to a commercial testing laboratory. Most of you, I realize, work for companies that do not have their own testing facilities, nor would it be desirable to pay fairly large commercial testing

#### Influences on Longevity

The second slide (Table III) shows just the parts of the specification which, in our estimation, have a controlling influence on the longevity of the paper. The two primary tests are the pH and the rosin. If in any paper the pH is lower than 5 or 4.7, or the rosin is higher than from 1.2 to 2%, chemical deterioration of the paper will take place and seriously affect the longevity. It is possible, therefore, to get a fairly good indication of the longevity of papers if no laboratory facilities are available by spot checking from time to time for the fibre content, the pH and the rosin. The folding endurance is an additional clue that I believe can be omitted provided you are buying paper from a high-class mill. In fact, it is extremely important, whether you have laboratory facilities and buy to specifications or do not have this control, to be sure to buy your paper from a good, reputable mill.

The last slide (Table IV) shows the change in the burst of papers

we tested originally and again 20 years later. These figures are based on a small number of tests and should not be taken at their absolute values. The main result of these tests shows that there is not a too excessive deterioration in the physical appearance of the paper over this period of time.

There are other factors which enter the picture which lessen the necessity of having papers that must last 100 years or more, or which aid papers of lower rag content or even all sulphite paper to have a longer life today than they might have had 30 or 40 years ago. Technological advances in the manufacture of paper have allowed the paper manufacturers to make much better quality lower rag content paper and also 100% sulphite paper. In our particular case, our buildings are airconditioned so that deleterious chemicals in the atmosphere do not come in contact with paper to effect a chemical change detrimental to the longevity.

#### Reasons for Down Grading

There are two more factors which have considerable weight to the down grading of paper. In the first place, many records which originally had to last 100 years or more and were put on 100% rag paper are now microfilmed after a short number of years and the original document is destroyed. If the program of micro - filming documents creases, the life of the paper document will be much shorter and further down grading may be possible. The second factor which, as yet, has not been fully evaluated will be the use of records growing out of the electronic computers such as the Univac or the

IBM 705 or 709. The problem of the period of keep of paper records which are or will be transferred either to punched cards or magnetic tape is one which, at present, we do not have the full answers, but it does seem quite possible that in the next 10 or 20 years, the development and use of electronic computers will affect the use of long-life papers.

Of course, it is nice that these factors are operating to allow us to down grade our papers because the prices of paper have been rising continually over a long period of years. Today, 50% rag bond is in the price range that 100% rag bond was 20 years ago, and the 100% rag bond which sold for around 30¢ a pound is now around 60¢ a pound. If you use 100,000 pounds of paper a year and can use 50% instead of 100% rag content, the savings will be \$30,000. Similar savings are made by putting records on all sulphite paper instead of 50% rag paper.

In conclusion, I believe that the selection of fine papers is materially changing and will continue to change in the next couple of decades to the use of lower grade papers for three reasons:

- (1) The increased longevity of these lower grade papers due to the technological improvements in their manufacture,
- (2) The lessened requirement for papers to last over a long span of years due to the introduction of micro-filming and the introduction of electronic data computer systems,
- (3) The increase in the price of all papers which makes us take a long look at the type of paper we select for our forms and records.

TABLE IV

#### TABLE III

| Bonds pH                          | (Min.)            | Rosin (Max.)      | Folding Endurance                             | Bonds                           | Change in Burst         |
|-----------------------------------|-------------------|-------------------|---|---------------------------------|-------------------------|
| 100% Rag<br>50% Rag<br>Sulphite   | 5.0<br>5.0<br>4.7 | 1.2<br>1.5<br>2.0 | 1250 (20 lb.)<br>300 (20 lb.)<br>105 (20 lb.) | 100% Rag<br>50% Rag<br>Sulphite | -6.7%<br>-8.2%<br>-3.2% |
| Ledgers 100% Rag 50% Rag Sulphite | 5.0<br>5.0<br>4.7 | 1.2<br>1.5<br>2.0 | 1050 (20 lb.)<br>290 (28 lb.)<br>160 (28 lb.) | Ledgers<br>100% Rag<br>50% Rag  | -7.7%<br>-4.4%          |
| Index<br>100% Rag<br>50% Rag      | 5.0<br>5.0        | 1.2<br>1.5        | ********                                      | Index<br>100% Rag<br>50% Rag    | -5.6%<br>-8.6%          |

# office equipment

#### and supplies



Dial selection is one of the special features of a new multi-purpose combined phrase and date office stamp introduced by the Douglas Homs Company, San Francisco, California. The new M-2 Dial-A-Phrase Dater provides eleven of the most essential office phrases followed by a No. 1-1/2 line dater all in one rubber stamp. The phrases are alphabetically listed and numbered on an anodized aluminum dial and the user simply turns the selector key until the desired phrase number appears in the dial window. The selector key prevents ink-

stained fingers.

Circle No. 63 on Inquiry Card—Page 17

After producing a tab rubber band—"the band with the handle"—for many years for special customers, Plymouth Rubber Company, Inc, Canton, Massachusetts, has announced that they are now marketing this special extruded band for general sales. The band, extruded in one piece from pure natural rubber, includes a special tip which is easy

to grasp for quick removal. This type of rubber band is familiar to buyers of home movie films. It is available in four sizes, one inch, one and one-half inch, two inch and three inch lengths.

Circle No. 64 on Inquiry Card-Page 17



Introduced at the recent National Microfilming Association convention in Rochester, New York was a new 16mm microfilm flow camera, the Documat PFA. manufactured by Documat, Inc., Belmont, Massachusetts. In addition to its low price feature, the PFA offers numerous operational advantages, including a filming speed of approximately 125 feet of printed copy a minute. The Documat PFA is adjustable for either duplex operation-photographing both sides of a sheet of paper simultaneously - or duo operation, recording documents in two parallel tracks on a single film roll, and is capable of recording 7,200 81/2 inch x 11 inch pages on a single 100 foot roll of film.

Circle No. 65 on Inquiry Card-Page 17



A flexible, easy-to-install, low-cost line of intercom equipment has been introduced by Crown Controls Company, Inc., New Bremen, Ohio. The economy and dependability of the new Crown inter-com make it especially practical for small factories, ware-houses and offices. The basic unit is the Crown Model 600M Master, styled with a modern charcoal grey metal cabinet.

Circle No. 66 on Inquiry Card-Page 17

Thomas Collators Inc., New York, New York, has available for distribution a new supply of collating cost calculators. Offices and businesses with duplicating operations involving the collating of pages into sets will find this slide-chart useful in planning collating work loads, time required and cost. The device provides quick, at-a-glance determination of the time in minutes required to collate from four to thirty-two sheets per set into multiples of from 100 to 1000 sets. by both manual methods and by Thomas collators.

Circle No. 67 on Inquiry Card-Page 17



JULIUS RLEIM, President, Gas Appliance Manufacturers Association, and President, Caloric Appliance Corp.



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For More Information Circle No. 257 on Inquiry Card-Page 17

# office equipment



The Heller Corporation, Brooklyn, New York announced recently the Roberts "88", a desktype numbering machine. It is a platform-type with reversible non-metallic platen that permits handling up to twenty carbons at one time. The user has a choice of nine inter-changeable printing heads, including one for vertical numbering. Handle and printing head swivel forward and back as a unit for convenience in re-setting wheels and compactness in stowing away. There is also a storage chamber for extra ink pads.

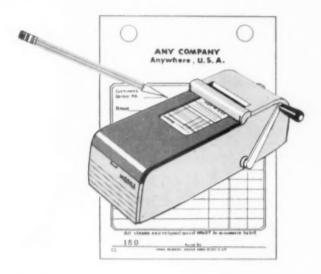
Circle No. 68 on Inquiry Card-Page 17



A new drafting table, originally designed by Republic Steel Corporation draftsmen for their own use, is now available from the company's Berger Division, Canton, Ohio. The drafting table and attached reference table provide ample space for working, storing drawings and filing correspondence and blueprints.

Circle No. 69 on Inquiry Card-Page 17

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For More Information Circle No. 261 on Inquiry Card-Page 17

# office equipment



Yawman and Erbe Manufacturing Company of Rochester, New York recently introduced a new line of filing cabinets, together with specially designed systems. The new line is called Pro-File. The Pro-File is completely different from general filing equipment in appearance, operation and use. It replaces the conventional file drawer with a rocking compartment, and introduces sidesystem filing. The increased visibility and accessibility of this immediate and complete opening, speeds filing and finding and provides quicker, easier reference. Pro-Files come in legal and letter

Circle No. 70 on Inquiry Card-Page 17



Peerless Steel Equipment Company, Philadelphia, recently announced availability of free office furniture do-it-yourself kits. A useful planning tool for all businesses planning a new office installation, or faced with problem of reducing floor space, or improving office worker efficiency. Circle No. 71 on Inquiry Card—Page 17



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For More Information Circle No. 262 on Inquiry Card-Page 17



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For More Information Circle No. 263 on Inquiry Cord-Page 17

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#### For More Information Circle No. 264 on Inquiry Card-Page 17

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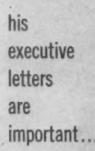
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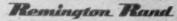


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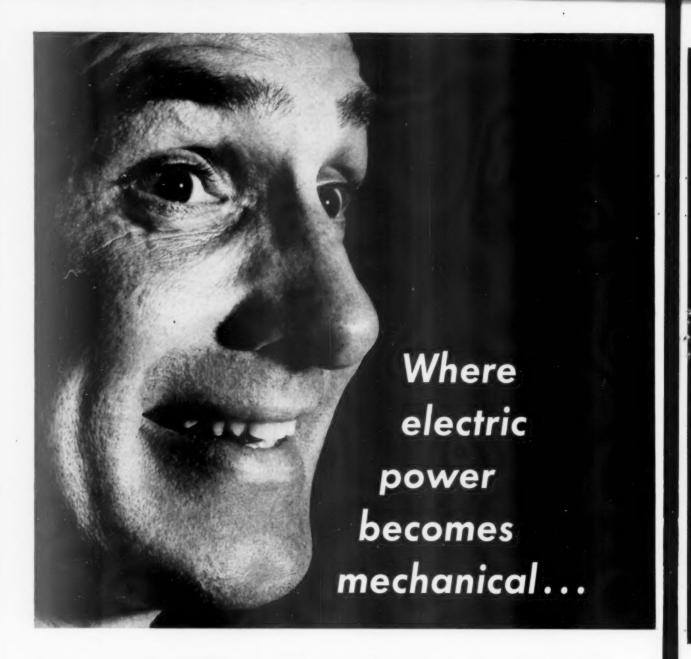
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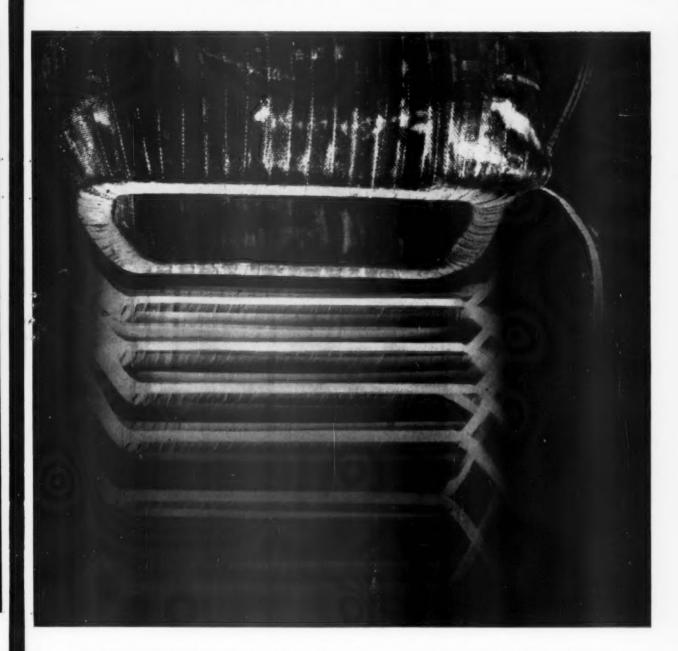


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# association news

### Buffalo Purchasing Course Is Tremendous Success

THE PURCHASING Agents Association of Buffalo held its final meeting of the Purchasing Techniques Institute before a packed house. Everyone who registered for the course attended, plus the regular members, making a total of 221 present.

The guest speaker for this outstanding event was H. Stafford Kellam, president of the National Association of Purchasing Agents. The topic of his excellent and informative talk was, "Growth of Professional Purchasing and Self Development."

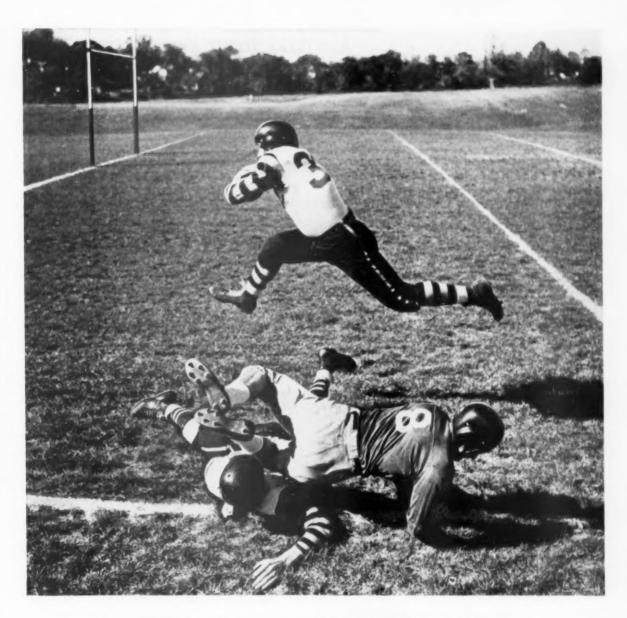
Mr. Kellam stressed the importance of purchasing personnel taking advantage of courses in purchasing given by local associations, universities and colleges. "The important part purchasing plays on management's team will not be recognized by management until we begin thinking in the broad scope of future development and better ways of doing our present jobs," said Mr. Kellam.

"In other words, purchasing should strive to work out problems with engineering and plant management. This can be accomplished by eliminating unnecessary details including a great portion of our paperwork." Mr. Kellam's inspiring talk was followed by a one-half hour question and answer period in which he demonstrated a complete knowledge of the problems confronting purchasing people today.

Four applicants were approved by the board of directors and voted into membership at the same meeting. The new members are: William G. Oswald, Dunlop Tire & Rubber Corporation; Robert J. Wagner, Olin Mathieson Chemical Corporation; Joseph V. Stephan, Seneca Steel Services, Inc.; and Robert J. Baker, Hooker Electrochemical.



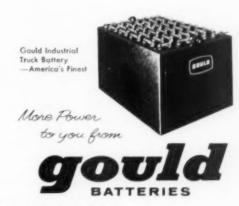
Members of the Purchasing Techniques Institute Committee (left to right): Paul Braun. Charles Parezo, Stanley Hallberg, Martin Murrett, Stuart Heinritz, editor of PURCHASING Magazine, Jack Rutterford and Roger Josselyn.



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For More Information Circle No. 267 on Inquiry Card-Page 17

## association news

#### Central Iowa Purchasing Conference



President Bob Sampson outlines program before turning meeting over to Art Minor (left), general chairman. E. S. Knutson is at right.

THE Purchasing Agents Association of Central Iowa in cooperation with Drake University's Community College in Des Moines were sponsors of a recent purchasing conference.

Art Minor, chairman of the education committee acted as master of ceremonies for the day. The first speaker Mr. Minor introduced was Frederick D. Lewis, professor of law, Drake University, who spoke on the "Legal Aspects of Purchasing."

The substance of Professor Lewis' talk centered around the lawyers place and purpose in the business of negotiation. The lawyer is trained and he feels it is his principal function to guide the layman in a vast and complicated field of legal problems. Professor Lewis felt that every buyer should have access to legal counsel to aid in the evaluation of responsibilities and problems in the negotiation of contracts.

The second speaker of the morning was E. S. Knutson, manager purchasing research department, Ford Motor Company, Dearborn, Michigan. The subject was, "Purchasing Analysis as Practiced at Ford Motor Company." Mr. Knutson's talk was divided into four parts. They were as follows: organizational structure; research of commodities and raw materials; procurement planning; and price analysis.

The afternoon session of this one-day conference was devoted to talks by Stuart F. Heinritz, editor of Purchasing Magazine



Chairman Art Minor and Bob Sampson with Professor Lewis (seated) of Drake University during an intermission.

and Leonard J. Konopa, assistant prefessor of Industrial Marketing, State University of Iowa, Iowa City, Iowa.

Mr. Heinritz's subject was "Management Aspects of Purchasing," and his presentation covered the procurement areas of planning, policies, controls and coordination. In closing, Mr. Heinritz stated that if purchasing expects to be a part of man-

agement they "must act like management."

Professor Konopa spoke on, "Teaching Procurement as a University Course."

The Purchasing Conference concluded with a Summary and Discussion Panel with Robert Reeves of Frye Manufacturing Company as moderator and the speakers of the day serving as the panel.



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1. Counterbored holes are the simplest approach to flush surfaces using standard socket cap screws. The advantage of specifying genuine Allen O Head Cap Screws is the greater strength of Allenoy steel... you can use smaller sizes for closer spacing and reduced weight. Call on Allen, too, for very large socket-head, precision cap screws — up to 2½ inch diameter.



2. Countersinking enables you to get absolutely smooth external surfaces using Allen O Flat Head Cap Screws. Allen O Cap Screws feature the exclusive Leader Point which makes screw starting easier and guards against thread damage.



3. Button Head Cap Screws produce snag-free unbroken surfaces where countersinking is impractical. Button-head hex sockets are necessarily shallow. In genuine Allen O Button-Head Cap Screws, sockets are cold forged without broaching, in extra strength Allenoy steel... essential protection against stripping the sockets under high torque pressure.



4. A ready made hole tapped in forged steel solves many a design problem. It's called the Allenut. It can be anchored in soft material to assure durable threading, or recessed to permit tightening with an Allen Hex Key.



5. Bright finish, or rust and corrosion resistance call for Allen O Stainless Steel Cap Screws. They are standard stocked items (both NF & NC threads) readily available in a wide range of sizes from Allen Distributors.

YOUR ALLEN DISTRIBUTOR can give you practical help and swift service. For complete information on any technical fastening problem, write our engineering department direct.



For More Information Circle No. 268 on Inquiry Card-Page 17

## CAROLINAS-VIRGINIA GROUP MEETS IN CHARLESTON



Francis O. Price (left) is shown presenting the Boffey Memorial Award to Cadet William R. Derr of The Citadel, Charleston, South Carolina.

THE CAROLINAS - Virginia Purchasing Agents Association held their spring meeting at Hotel Fort Sumter, Charleston, South Carolina with about 175 purchasing executives from the two Carolinas and Virginia attending the two day session.

Stuart F. Heinritz, editor of Purchasing Magazine, spoke on the, "Competitive Aspects of Purchasing" drawing parallels and emphasizing differences between the purchasing function in America and in five European countries.

James M. Berry, purchasing agent for Vick Chemical Company in Greensboro, North Carolina spoke on "Education for Purchasing" and pointed out that education may begin in the classroom but must not end there. A purchasing man must conduct his profession in a manner receptive to learning forever. An edu-

cational film entitled, "Industrial Purchasing" (available from Purchasing Magazine) was shown and followed by a group discussion.

R. B. Borth, Washington representative of the General Electric Company, delivered the banquet address, "The Purchasing Agent's Other Important Job" which is, keeping up with government. Participation is a duty to self, company and community.

The Public Relations Committee presented Manch R. Frierson, West Virginia Pulp and Paper Company, Charleston, South Carolina, in a program explaining that company's methods and policies in the local purchasing of pulp wood.

The session closed with a forum panel analysis of "N.A.P.A.
—Principles and Standards of Purchasing Practice."



Officers of the Carolinas-Virginia Purchasing Agents Association at the Charleston meeting: C. C. Johnson (left), secretary; Henry R. Michel, vice president; B. B. Parker, treasurer; Paisley Boney, president; I. M. Lynn, director; and W. F. P. Coxe, national director.

# One way to be a Hero to your management



If your shop spends heavily for bronze for replacement bearings, you can save money and provide much better performance by recommending ASARCO Continuous-Cast Bronze.

ASARCON Bronzes are entirely unlike anything else you can buy for several reasons:

(1) Though ASARCO continuous cast bronzes conform to SAE, ASTM and Government specifications, their performance is far superior to sand-cast or permanent mold alloys. For example:

|                        | Typical<br>Yield<br>Strength | Typical<br>Impact<br>Strength | Typical<br>Fatigue<br>Strength |
|------------------------|------------------------------|-------------------------------|--------------------------------|
| ASARCON 773 (SAE 660)  | 27,000 psi                   | 12.6 ftlbs.                   | 20,000 psi                     |
| Sand-Cast SAE 660      | 19,500 psi                   | 9.3 ftlbs.                    | 12,200 psi                     |
| Permanent Mold SAE 660 | 21,900 psi                   | 10.4 ftlbs.                   | 14,500 psi                     |

(2) ASARCON bronzes come in lengths up to 105 inches. You can order the lengths that will minimize your short-end scrap, or lengths cut exactly to your requirements.

ASARCON 773 (SAE 660) is carried in stock by distributors in all major industrial areas.

You can do a lot to keep production and shop costs down. Just call your ASARCO salesman or distributor or talk to him the next time he drops around. Or you can write us directly for full information about the product and the process.

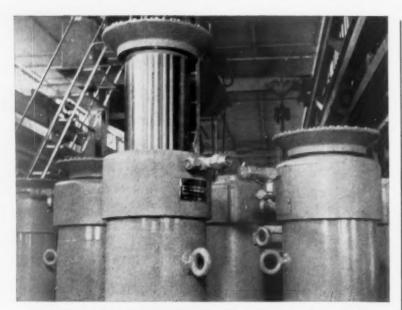


**Continuous-Cast Products Department** 

#### AMERICAN SMELTING AND REFINING COMPANY

Perth Amboy Plant, Barber, New Jersey . Whiting, Indiana

WEST COAST SALES AGENT: Kingwell Bros. Ltd., 457 Minna St., San Francisco IN CANADA: Federated Metals Canada, Ltd., Toronto and Montreal



# PAD EYES SOLVE PROBLEM FOR HYDRAULIC JACK MANUFACTURER

To simplify contractors' handling of heavy jacking cylinders out on the job, Rodgers Hydraulic, Inc., Minneapolis, installs drop forged Crosby-Laughlin Pad Eyes. Because of the high pressures developed within the 50 to 600 ton capacity cylinders, fittings have to be welded on—not secured through the cylinder. Rodgers engineers selected Crosby-Laughlin Pad Eyes as the safest, simplest solution to their problem.

More and more OEM's are discovering that welding time is reduced—safety increased when they specify Crosby-Laughlin Pad Eyes with the wide, easy to weld base. Eye diameters from ½" to 1½" meet a full range of industrial product applications.

Crosby Laughlin Division manufactures a full line of drop forged fittings for OEM use. Eye bolts, ring bolts, rivet eye bolts, body bolts, eye nuts, lifting eyes, shoulder eye pins and pad eyes are available in styles and sizes that meet OEM requirements. Select from America's most complete line of quality drop forged fittings. Write direct for fully illustrated, descriptive catalogs, or call your nearest industrial or mill supply distributor.



#### SAFER SLINGS!

Handling heavy products and production equipment can seriously weaken wire rope slings unless they're protected by thimbles. Heavy lifts can crush the rope strands at the load point. A light, inadequate thimble may collapse and also damage the rope. For positive rope protection and safety. specify Crosby-Laughlin heavy plow steel thimbles with the extra heavy steel section design that stands up under maximum loads. Plow steel thimbles are available in sizes to fit 1/4" to 21/4" wire rope. Selected sizes in stainless steel.

Stocked and sold by leading distributors everywhere

#### **CROSBY LAUGHLIN DIVISION**

FT. WAYNE 1, INDIANA

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## association news



Hugh M. Everett, The John Bertram & Sons Company, Ltd. was recently elected president of the Canadian Association of Purchasing Agents. Mr. Everett succeeds Clifford G. Lloyd, G. Solway & Sons, Ltd.

#### D. C. Ass'n Has Active Program

Harold Curtis, Hot Shoppes, Incorporated and Al Sebastian, Washington Brick Company were the panel members at a recent meeting of the Purchasing Agents Association of Washington, D. C.

The topic under discussion was "Systems." The experiences of Mr. Curtis and Mr. Sebastian as recounted at the meeting were of great value to all attending members.

Carl Von Spitzenger conducted a visitation at Eastman Kodak Processing Laboratory. The tour was very informative and those who attended had the opportunity to see the art of film processing, step by step.

Joe Faubey, chairman of the Fifth Seminar Session recently arranged a panel discussion on "How to Ship." The panel consisted of Dale Bauer, assistant director of cargos, Capital Airlines; Royce Nickey, assistant district sales manager, Pennsylvania Railroad and Harry Siffrin, assistant sales manager, Fleet Transfer Company.

For More Information Circle No. 271 on Inquiry Card—Page 17→ PURCHASING

#### 39 Sources

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Pre-assembled Sems are a first step in cost saving automation. Often hopper fed in automatic driving, Sems save washer handling motions however used. Washers can't get lost, are never forgotten, can not be mis-matched to screw. Rejects are stopped, faster assembly given the go-ahead. Order Sems in the type and size you need.

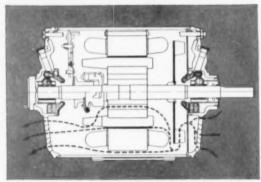
Sems

pre-assembled screw and lock washer





# the WAGNER '48"



#### OUTSTANDINGLY EFFICIENT COOLING SYSTEM

Schematic drawing shows how a large volume of air is directed through the motor to effectively reduce temperatures. Large blower at right draws air in through drip-proof openings in back endplate, forces it around back coil extension—through rotor vent holes—air gap—and through passages between stator core and frame. Cast blower at left circulates air around coil extension and drives it out the motor through front endplate openings.

Savings in space and weight are among the many advantages of using Wagner "48" capacitor-start or split-phase motors in your equipment. These motors come in the standard 48 frame sizes and weigh from 3 to 8 pounds less than the previous models in the same hp ratings.

Because no parts of the motor mechanism are housed in the endplates, it is possible to materially reduce their depth. An effective lubrication system assures positive protective lubrication for the bearings in any position. You can mount these motors at the angle best suited to your equipment.

The capacitor-start, Type RK "48" comes in ½ or ½ hp ratings, and the split-phase, Type RB "48" in ½, ¼ or ½ hp. Both types are available with resilient bases or with rigid bases that are welded to the steel motor frames for ruggedness and strength. You can get these motors from leading motor distributors in your community and from Wagner sales offices in 32 principal cities. Check your telephone directory for the supplier nearest you. Write for your file copy of NEW Bulletin MU-217 on the Wagner "48".

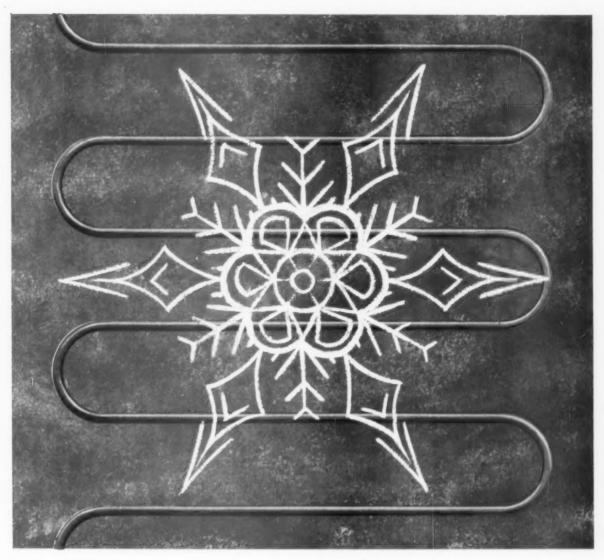
Electric Corporation
Magnet

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ELECTRIC MOTORS . TRANSFORMERS . INDUSTRIAL BRAKES . AUTOMOTIVE BRAKE SYSTEMS -AIR AND HYDRAULIC

M57-13



#### This snowflake never had a chance



... to cause any trouble. Unfortunately (for the snowflake) he drifted on to a piece of paving that had a SPANG CW Steel Pipe snow-melting system in operation. Two brief seconds later, he was a small drop of water.

A whole sky-full of snowflakes won't bother you this winter if you have a snow-melting system at work for you. Your loading docks and driveways will be clear all winter long. Nobody in your company will have to shovel walks or spread chemicals or salt. You'll eliminate some accident hazards, And you'll save money, too!

We have a book that explains all about snow melting, how it's installed, how it works, how much it costs, how you benefit. Write us for a copy of "Snow Melting Systems." It's yours for the asking.

Then talk it over with your plumbing and heating contractor. Tell him to use Spang CW Steel Pipe in your installation, because quality-controlled Spang CW Steel Pipe will give you top-quality service for years and years.

#### SPANG-CHALFANT DIVISION OF THE NATIONAL SUPPLY COMPANY

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the new molding material that's both TOUGH and GENTLE,



Ace-Hide acid pail



Molded top for golf bag



Large molding is lid for beverage cooler Ace-Hide is a new rubber-plastic molding material designed to take a beating without showing it. Its toughness, smoothness, resilience and excellent chemical resistance have already led to wide-spread use for things like chair arm pads, scuff guards, acid pails and golf bag tops.

Ace-Hide is a special blend of rubber with plastic, hence is light in weight and has good electrical and thermal insulating properties. Rigidity and impact strength (to 10.0 Izod) can be varied to suit. Takes inserts well. Surface is smooth, shiny. Does not develop flexing cracks, and ages well. Ace molding facilities offer wide range of sizes and shapes. We'll be glad to make specific recommendations. Write today.

Ace-Hide and many other hard and soft rubber, plastics, and rubber-plastic blends are described in 80 pg. ACE Handbook. Write for your copy today!



#### Dayton Ass'n Sees Tubing Movie

The Dayton Purchasing Agents Association enjoyed a double-barrelled program at a recent meeting. J. J. Arntz, assistant sales manager for the Ohio Seamles Tube Division of the Copperweld Steel Company delivered a running commentary in connection with the feature, color film, "The Miracle of Seamless Tubing.' Mr. Arntz is also president of the North Central Ohio Sales Executive Club.

Color greatly adds to the enjoyment of any film and since most of the members buy steel in one form or another, the subject for the evening proved of tremendous interest to all attending.

Lewis A. Jones, former national association president, gave some valuable and timely tips on "Vendor Relations" immediately preceding the color film presentation.

A "Swap Shop Forum" under the direction of Donald Taintor, of Angell Manufacturing Company, standardization director of the Dayton Association was held on March 4. Mr. Taintor secured the able assistance of Dan Oxborne, Moraine Box Company, Richard Butler, Gardner Comtainer Company; William Johnson, Diamond Gardner Company; and Loren Askins, Gebhart Folding Box Company.

#### Alabama Turns Out in Force

A large crowd came out to a recent meeting of the Purchasing Agents Association of Alabama. One of the reasons, undoubtedly, was the featured speaker, Vincent de Paul Goubeau, vice president of materials, Radio Corporation of America. His subject was, "New Horizons for Purchasing."

## **ACE** rubber and plastic products

AMERICAN HARD RUBBER COMPANY
93 WORTH STREET - NEW YORK 13, N. Y.

For More Information Circle No. 274 on Inquiry Card-Page 17



# "UNOBA GREASE...general purpose lubricant at Aberdeen Plywood"



"Union's UNOBA Grease has been the general purpose Iubricant in this plant for more than three years, and we're well satisfied with it.

"A good example of UNOBA'S effectiveness is the way it protects the knife trunnion bearings on our 10' Coe lathe—despite heavy loads and ever-present moisture conditions these bearings have never stuck since we started lubricating them with UNOBA Grease.

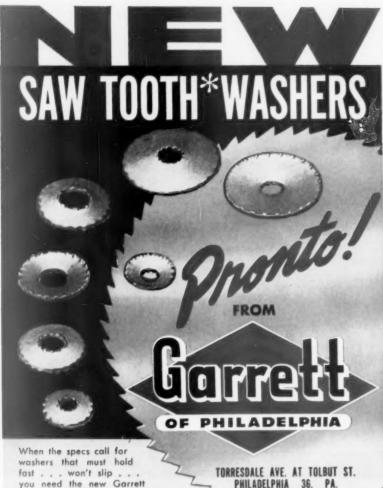
"Too, our records show that we use less grease since we switched to UNOBA, and we have been able to eliminate many other lubricants that were previously considered necessary. The maintenance men and operators tell me that UNOBA works easier in their guns and hangs together better than any grease they know of ... that it's equally effective in high speed bearings as it is in the hog and lathe bearings that take the poundings."

Aberdeen Plywood Corporation, long one of the world's most important producers, is one of several large plywood and veneer plants served by Union Oil Company of California. A Union Oil engineer with specific answers to lubrication problems peculiar to the industry is as near as your phone.

#### UNION OIL COMPANY

76

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you need the new Garrett Belleville "SAW TOOTH" Washer, Teeth on the external and internal peripheries actually

DEvonshire 2-6000 bite into the metal and tenaciously hold their position. The Garrett "SAW TOOTH" Belleville design results in spring tension that stays tight regardless of dimensional changes of assembled parts. Developed by Garrett

Research for modern Industry's demands -- "SAW TOOTH" washers are available in standard sizes and in a variety of metals and finishes. Garrett, manufacturers of the world's largest line of washers, can deliver your order PRONTO!

FLAT WASHERS -Meets new ASA and SAE standards . . steel, brass, bronze, monel, aluminum and stainless steel . . . any finish.

HELICAL SPRING LOCK WASHERS -With controlled tension for tighter assemblies.

SPRING WASHERS -- 1 Belleville, Bevel, 3 Wave, 4 Wave and other Spring Washers of special design.

METAL STAMPINGS-Made to your specifications on highspeed production presses.



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# association news

#### Washington P.A.'s Elect Officers

Officers for the year 1957-58 were elected at the regular April monthly meeting of the Purchasing Agents Association of Washington. Those elected were: president, H. L. Wanser; first vicepresident, H. S. Beetham; second vice-president, H. G. Russell; secretary, M. C. Michener; treasurer, W. H. Landweer; and national director, A. W. Fox. After all committee chairmen had reported to the membership, the program chairman, H. L. Wanser, introduced the guest speaker of the evening, Colonel L. C. Aus-

Colonel Austin is chief of contracts division, Air Force plant representative, Boeing Airplane Company. He delivered a very informative and most interesting talk on how the Air Force goes about the buying of an airplane. Colonel Austin discussed the problems beginning with the design stage and following through to the finished product.

#### Cleveland Group Discusses Petty Orders

The recent forum meeting of the Purchasing Agents Association of Cleveland presented the subject of, "The Purchasing of Petty Items on Term or Blanket Orders.'

The panel discussed methods of setting up a blanket order system for petty items, some of the savings to be gained by such systems and some of the problems that are involved.

George A. Fay, Addressograph-Multigraph Corporation, was moderator with Arnold O. Anderson, Aluminum Company of America and Lewis Heil, Republic Steel Corporation, as panel members.



# It makes sense... DOLLARS and SENSE!

If you can buy paint with built-in engineered qualities — and they save you money, to boot — it sure makes sense to look into it!

Take Barreled Sunlight ENGINEERED Paints. These heavy duty paints for industrial, institutional and commercial buildings are not just residential paints with different labels. They are paints especially formulated for rugged service by America's most experienced maintenance paint specialists.

These paints are "engineered" in two important ways:

First, they are engineered to stand heavy use or special conditions. These engineered factors save you money by lengthening service life . . . reducing the frequency of repainting.

Second, Barreled Sunlight Paints are engineered to save you money in the actual painting. By engineered improvement in paint flow and paint coverage, Barreled Sunlight Paints actually reduce labor hours . . . save labor dollars which today are at least 80% of total painting costs. The net result is a lower on-the-wall paint cost in spite of Barreled Sunlight's sometimes higher per-gallon cost.

#### Get Your Free Copy Today!



Here's good reading for anyone concerned with maintenance painting. Gives clear, concise, down-to-earth facts on paint and color. Tells how Barreled Sunlight Engineered Paints save money three ways. Complete with color chips and recommendations for every type of surface. For your copy of "Engineered Color," write Barreled Sunlight Paint Company, 18-A Dudley St., Providence 1, Rhode Island.



**Barreled Sunlight** 

FOR A BETTER LOOKING, LONGER LASTING PAINT JOB AT LOWER COST



# association news

#### Akron Holds Second Annual Conference

The second annual purchasing conference sponsored by the Akron Association of Purchasing Agents was held recently at the University of Akron.

Over 160 men and women turned out to hear the three well-planned panel discussions. The first panel covered, "Legal Phases," and consisted of V. L. Peterson, chairman, C. Blake McDowell Jr., representing the legal profession, L. A. Anderson and E. W. Goewey.

The second panel, "Transportation—From Here To There and How," had W. P. Bray, R. Klar, W. Stiegele and R. W. Wettstyne as panel members.

"Value of Purchasing—Purchasing Value" was the third panel and its members were A. D. McPherson, D. L. Flanders and F. D. Stinaff.

As each panel completed their part in the program a question and answer period was carried out with quite a few of the audience participating in the discussions.

#### Baltimore Maintains Attendance Average

The Baltimore Division of the Purchasing Agents Association had a large turnout at a recent meeting to hear Mr. Herman Barger of the United States Department of State. Formerly a foreign correspondent and member of the Argentina Embassy, Mr. Barger's topic was, "Foreign Economic Policy in the East-West Struggle."

In addition to the informative talk by Mr. Barger, a film entitled, "Refueling in the Jet Age" was presented by the Flight Refueling Corporation, a member of the Baltimore Association.

For More Information Circle No. 279 on Inquiry Card—Page 17→ PURCHASING



#### cool metal for hot planes

For jet and rocket aircraft engines, wings and surfaces that are subject to extreme conditions of heat, friction and corrosion, where the metal *must stand up* . . . design it, improve it and protect it with Melouth Stainless steel.

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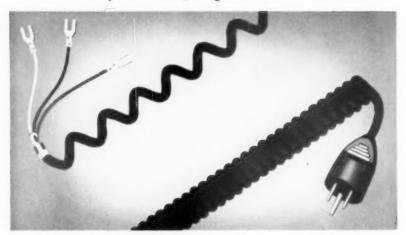
for aircraft



MCLOUTH STEEL CORPORATION DETROIT, MICHIGAN

# Specify **© COILED CORDS**

...add important convenience and safety features to your equipment!



# Cords Limited COILED CORDS are engineered for specific application!

Coiled Cords, first choice in the communications industry, find numerous important applications in other fields! In addition to user convenience, Cords Ltd. Coiled Cords provide a safety factor preventing costly industrial accidents. Maintenance-wise, Coiled Cords give much longer service than straight cords by eliminating common abuses that shorten serviceability.

**Product Data:** A leader in the development of Coiled Cords, Cords Limited is a major supplier of this product to the telephone and communication industries. Coiled Cords are engineered for specific applications. Special oil, acid and moisture resistant properties of the jackets protect the product under unusual conditions. The most modern molding facilities for plug and conductor termination are available at Cords Limited to serve your needs quickly and economically!

WRITE TODAY for complete details . . . your quotation requests will receive immediate attention!



#### CORDS LIMITED DIVISION

ESSEX WIRE CORPORATION
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For More Information Circle No. 280 on Inquiry Card-Page 17

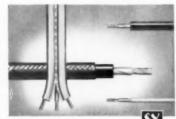


other outstanding
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production proven products



A.C. or D.C. General Purpose Multipole relays. For circuit switching of electrical inter-locking remote control devices. Features special cross-bar contacts for low-voltage, low current circuits or button type contacts for power switching circuits. Request Bulletin No. 1060.

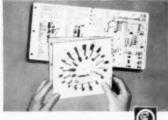
R-B-M "Control" Division Logansport, Indiana



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A full "Extra Test\*" line of lead, appliance, automotive and refrigeration wires, plus submersible pump cable and 200° C. Sil-X\* insulations are examples of the versatility of "Essex Engineering".

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The CORDINATOR, a time-saving engineering tool, features simplified charts showing approved wire by product types. Dial side permits visual fabrication of cord sets and power supply cords. All components standard approved... minimizing cost... assuring scheduled delivery. Write for your free CORDINATOR.

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full line for every use—immediately available from your conveniently located Schrader Distributor



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Flow Control Valves



**Quick Exhaust Valves** 





For More Information Circle No. 281 on Inquiry Card-Page 17

**QUALITY AIR CONTROL PRODUCTS** 

## USG

### Over 50,000 different gauges



to meet every requirement

SUPERGAUGES



INDUSTRIAL GAUGES



BOILER GAUGE



THERMOMETERS



RECORDERS

Gauge for gauge—in every application classification—in every price range—you can't beat use for value. use has a line to meet every price and performance requirement.

SUPERGAUGE® LINE—With proper application, USG Supergauges will last a lifetime. USG Supergauges are world famous in process control for their ruggedness, dependability and enduring accuracy.

INDUSTRIAL CAST CASE LINE—For those applications where heavy duty service requirements do not demand the high accuracy of Supergauge construction.

**DRAWN STEEL CASE LINE**—The outstanding value in the low cost general purpose and domestic heating gauge field.

USG gauges are installed on 6 out of 10 original pieces of equipment . . . the selection by so many buyers who demand both quality and economy being proof of USG values.

For help with your gauge problems, call the nearest USG Distributor...his name is in the yellow pages of your phone book ... or write the factory.

### UNITED STATES GAUGE

Home of the SUPERGAUGE

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MORE THAN 50,000 TYPES OF GAUGES • SUPERGAUGES • SOLID FRONT GAUGES • RECEIVER GAUGES • TEST GAUGES • RECORDERS • CONTROLLERS • TRANSMITTERS • PSYCHROMETERS • AVIATION INSTRUMENTS

For More Information Circle No. 282 on Inquiry Card—Page 17

#### Central Michigan Hears Simplified Purchasing

Simplified purchasing and industrial work for the physically handicapped were discussed at a recent meeting of the Central Michigan Purchasing Agents Association.

Three panel members, representing different types of industry, presented their particular purchasing methods. Panel members were: Donald Daney, Clark Equipment Company, large industry spokesman; Martin Eichorne, Schaberg-Dietrich Company, Lansing wholesale house; Fand Fred Adams, Adams Tool and Engineering, Lansing custom machine shop.

In addition to the panel discussion, Richard Jobe of Rehabilitation, Industries at Lansing, explained his organization's work in obtaining subcontracts for simplenature industrial employment for physically handicapped.

#### Dayton Hears Transportation Expert

Leonard G. Hunt, vice president of the Emery Air Freight Company addressed the Dayton Association of Purchasing Agents at a recent meeting held in the Van Cleve Hotel. Purchasing agents seem to be in agreement that placing the order is one thing and getting a firm shipping date is another problem, but the transportation of the materials is a never ending source of harassment.

Mr. Hunt provided the group with information regarding the Emery Freight methods of keeping the material in transit moving, and spoke of the ends to which a privately owned business, such as theirs, will go to get a customer's valued rush shipment in his hands on time.

## NOW GENERAL ELECTRIC TURNS WATER COOLER INTO "BUSINESS MACHINE"

and cuts cost of coffee breaks



Model JCH1

## New General Electric Hot and Cold Water Coolers

PIPING HOT WATER
Always on tap

Coffee, tea, chocolate, soups... other instant beverages ready in a jiffy—employees need not leave the working area. REFRESHING COOL WATER
Always on tap

The fully insulated sanitary cooling unit keeps an ample supply of refreshing drinking water available.

ANOTHER EXTRA TOUCH. Roomy refrigerated compartment stores bottled beverages, fruits, lunches, milk, cream, other perishables. Two lever-action cube trays supply 48 ice cubes.

This on-the-job refreshment center has the same importance to management as modern business machines, because it saves coffee break time that's worth real money.

Actual records spotlight the economy and efficiency it brings to offices and plants, with savings in some instances running to thousands of dollars a year. It's a good will builder, too—employees like its convenience and appreciate getting their refreshment at lower cost.

There is a General Electric model to fit your particular needs, engineered for your satisfaction and backed by the famous General Electric 5-Year Protection Plan. Why not get full information about this business-like solution to the coffee break.

Also available, Pressure type Hot and Cold model (shown here), Standard Bottle and Pressure type models and new economy-size Junior Cooler.



Model RH512

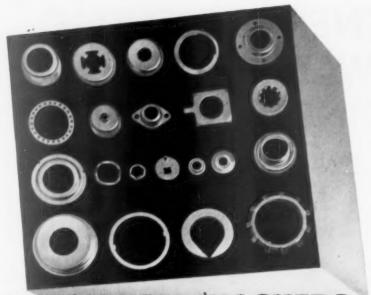
Call your local General Electric Water Cooler Dealer, General Electric Co., Commercial and Industrial Air Conditioning Department, 5 Lawrence Street, Bloomfield, New Jersey.

Progress Is Our Most Important Product

GENERAL 🍪 ELECTRIC

In Canada, Canadian General Electric Co., Ltd., Montrea

For More Information Circle No. 283 on Inquiry Card-Page 17



## Any Kind ... Any Shape ... Any Size Here's Your No. 1 SOURCE

It can be important to you, in a number of ways, to deal with the world's largest producer of washers... and to maintain such a contact as standard purchasing policy.

You have assurance, first of all, of uniform high quality...a point too frequently overlooked in the purchase of washers. Large volume production permits a stable, competitive cost factor and quick availability of all classifications of standard and special washers...any kind, any shape, any size or materials. Our complete inventory of more than 100,000 sets of Washer Dies is at your disposal without extra cost...offering the broadest possible base for the selection and production of washers to meet your specifications.

Count Wrought Washer Mfg. Co. as your No. 1 Source for Washers and Stampings and enjoy the benefits that this represents.



The World's Largest Producer of Washers
For More Information Circle No. 284 on Inquiry Card—Page 17

### association news

#### **Buffalo Has Successes**

The Purchasing Agents Association of Buffalo recently conducted two events that were outstanding successes.

The annual dinner dance at the Buffalo Trap and Field Club highlighted the winter season and was attended by 485 members, guests, and their wives. E. Scheelar, chairman, and his two co-chairmen, Charles Messenger and Gerry Rease, deserve much credit and thanks for a very successful and enjoyable party.

The second outstanding event was the final meeting of the Purchasing Techniques Institute attended by all registered for the course plus the regular members making a total of 221 present.

#### Philippine Ambassador Addresses Pittsburgh Association

The 1957 Annual Executive Night of the Pittsburgh Association of Purchasing Agents proved to be a record breaker when all previous attendance records were broken as an even 700 sat down to dinner.

President David A. Riggs presided and C. Warner McVicar introduced the principal speaker, General Carlos P. Romulo who chose for his subject, "The Alphabet of the Apocalypse." General Romulo emphasized particularly the perils of communism that are confronting all free nations.

He pointed out that there can be no neutralism in the fight for freedom. It is an added fire that helps communism. The Philippine ambassador to the United States was visibly affected at the start of his address as he paid tribute to his president who had a tragic death just a short time before the meeting.

> For More Information Circle No. 285 on Inquiry Card—Page 17→ PURCHASING



## Here's Why Continental Quality Broaches Actually Cost <u>Less</u> Than Ordinary Broaches

After all, the price paid for a broach may be only the beginning of broaching expense. To the original cost of the broach must be added the cost of work delays, scrapped parts, and time-consuming adjustments.

However, if the broach is free cutting, holds the required tolerances and finishes, with the maximum pieces per tool, your original cost may be your only cost.

Because Continental effectively combines quality materials, skilled craftsmanship, and engineering experience, it is a fact: "the best broaches cost less."



Division of Ex-Cell-O Corporation Detroit 32, Michigan



For More Information Circle No. 286 on Inquiry Card-Page 17

association news

#### Washington Assn. Hears Talk on Human Relations

Allan Fox presided at the regular monthly meeting of the Purchasing Agents Association of Washington held recently in the Olympic Hotel.

Mr. Koeppe, educational chairman, introduced A. Schrieber from the faculty of the University of Washington who presented awards to the winners of the 1956 Boffey Memorial Award Students Contest from the Washington area.

Dr. Delbert C. Miller, assistant professor of the School of Industrial Sociology of the University of Washington gave a talk entitled, "Human Relations and the Purchasing Agent."

#### Transportation Costs Compared at Baltimore Meeting

The regular monthly meeting of the Purchasing Agents Association of Baltimore was held recently in the Lord Baltimore Hotel. The principal speaker was Guy M. Springel Jr., Capitol Air Lines, Washington, D. C.

Mr. Springel's subject was, "Comparison of Transportation Costs." In addition to Mr. Springel there were also two speakers from the Baltimore Association. A program has been started where two members give a brief talk concerning their company and the products made by them. It has shown marked results by way of inquiries by members who require the products discussed, or information pertaining to allied products. The talks usually run about fifteen minutes and are very well received.

For More Information Circle No. 287 on Inquiry Card—Page 17→ PURCHASING



### New Black & Decker Furnace Cleaner POWER-Packed for Fast Cleaning



Soot Vanishes Fast with powerful suction of B&D #648 Furnace Cleaner powered by big 1¼ HP Motor.



No. 39242 Accessory Assortment converts your #65 Vacuum Cleaner for fast, easy furnace cleaning.

RUGGED SEMI-RIGID Hose (1½" diameter) and special Orlon bag make #648a powerful addition to your cleaning equipment. See Swifty Service for longer life, better performance from your B&D Tools. Look in Yellow Pages for Factory Service Branch.





## Powerful B&D Furnace Cleaner plus unique idea speeds cleaning work

The new B&D Furnace Cleaner is a real boon to cleaning boiler tubes—increasing furnace efficiency. Powerful—its big 1½ HP motor provides tremendous suction. Special Orlon bag acts as a second filter, resists charring, acids, mildew; eliminates clogging. Large wheels make maneuvering stairs a cinch.

Add this unique idea from a user and you obtain a plus from your B&D Furnace Cleaner! User reports cleaning his furnace every week meant emptying the tank 2 or 3 times a cleaning—slowing up the job. Now, he empties the tank once every two weeks! Here's how he does it. Cut an inlet and outlet as close to the top lip of a 55 gallon drum as possible. Make connections with 1½" or 1½" pipe. Connect hose to vacuum cleaner inlet and drum outlet. Attach cleaning hose to drum inlet. Dirt passes from furnace to drum—overflows into cleaner bag. Result—emptying time slashed 6 to 1—cleaning time drastically reduced.

Call your B&D distributor for a free demonstration or write: The Black & Decker Mfg. Co., Dept. 1707, Towson 4, Md. (In Canada: P.O. Box 278, Brockville, Ontario)

Leading Distributors Everywhere Sell













Highly absorbent Scott Wipers\* are Perf-embossed® . . . a special process that imparts thorough cleaning action, faster liquid absorption. They're 2-ply paper, welded for strength-ideal for jobs like wiping this giant radial drill machine.

#### WIPER PROBLEM? Look what Continental-Diamond Fibre did with Scott Wipers!

Continental-Diamond Fibre Corporation, Newark, Delaware, makes products for the electrical and communications industries. Wanting to get away from unsightly piles of oily cloths-and always conscious of the hazards involved in using cloths around high speed machinerymanagement switched to Scott Wipers.

Result: a saving of \$2,000 a year, better control of wiping materials, cleaner, neater plant appearance, reduced accident rate. Scott Wipers, fresh from the box, carry no foreign particles to cut or scratch—are always handy to each work station. Disposal is easy, in nearby receptacles.

Scott Wipers are found to be ideal for nearly 95% of all wiping jobs here. They're used on milling machines, lathes, drills, punch presses, on machines that do skiving, extruding, slitting and winding.

For more facts on lint-free, efficient Scott Wipers, call your local Scott representative. Or write Scott Paper Company, Department PW-77, Chester, Pennsylvania.



COMPANY Makers of the famous Scott paper products you use in your home:





If you use stainless or high alloy pipe or tubing, this new illustrated handbook was written for you. It's 58 pages big — packed with informative data that you'll refer to again and again.

The table of contents is too long to list here, but it includes, for example, analysis and conversion tables, corrosion characteristics, weights, alloy properties, bending, joining and installation hints.

We can't guarantee how long the supply will last. To be sure of getting your free copy, why not clip and mail the coupon now?



TRENT TUBE COMPANY

A Subsidiary of Crucible Steel Company of America GENERAL OFFICES: EAST TROY, WISCONSIN MILLS: EAST TROY, WIS.; FULLERTON, CALIF.  $\leftarrow$  For More Information Circle No. 288 on Inquiry Card—Page 17  $July,\ 1957$ 

For More Information Circle No. 289 on Inquiry Card—Page 17 221

# purchasing people

#### in the news

B. F. Monroe, former supervisor of the traffic, shipping and receiving departments for Wagner Bros. Inc., Detroit, Mich., has been promoted to purchasing agent for the Dix Avenue plant. Before joining the company, Mr. Monroe was associated with Acme Fast Frenght Co., Detroit.

RECEDED AND DESIGNATION OF THE PERSON NAMED IN COLUMN TWO IN COLUMN TO THE PERSON NAMED IN COLUM

William H. Stapleton has been assigned to the newly created position of general manager of purchases for Inland Steel Company,



William H. Stapleton

Chicago, Ill. Mr. Stapleton has been purchasing agent at the company's Indiana Harbor works since 1943. He will be succeeded in that position by **Edwin J. Fas**ter, now staff assistant in charge of purchasing research. Leigh B. Block, vice president in charge of purchasing, has also announced plans for the formation of a trade



Edwin J. Faster

relations division to cover all supplier contacts of the steel company and its subsidiaries and divisions. Mr. Stapleton will establish it and direct its activities.

Robert Allardice, Jr., assistant secretary of Driver-Harris Company, Harrison, N. J., has been named vice president and director of purchasing. Mr. Allardice replaces Ernest A. Harleman, who has retired after completing 42 years of service. Mr. Harleman became an officer of the company in 1923 and was made a vice president in 1940. He was elected a

director of the company in 1948 and will continue to serve in this capacity.

Denison Engineering Division, American Brake Shoe Company, Columbus, Ohio, has announced the appointment of Carl W. Lindahl as director of purchasing. Mr. Lindahl came to the company in 1942 as a machine designer and group leader. He has held the following positions from 1946 to 1956: chief draftsman, chief of



Carl W. Lindahl

general engineering, and executive assistant to the director of engineering. A member of the Engineer's Club of Minneapolis, Mr. Lindahl studied at the University of Cincinnati and Ohio State University.

For More Information Circle No. 290 on Inquiry Card—Page 17→ PURCHASING Values You Can't Specify



## You Get Them in MIDWEST PIPING

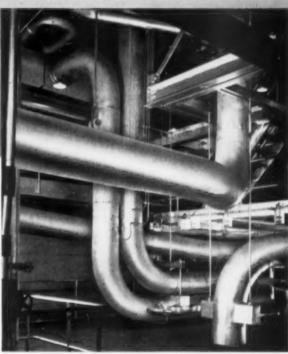
In the fabrication and erection of every high pressure and/or high temperature piping installation, there are intangibles important to the success of the job . . . things that cannot be spelled out in the specifications but are essential to getting superior piping at an economical price.

Important among these is the experience of the fabricating and construction organization... experience on all kinds of projects so that the possibilities and limitations of all piping materials are well understood. Midwest has fabricated and erected the piping on many critical jobs... including numerous atomic energy projects and Kyger Creek (the largest steam power plant ever handled completely by one piping contractor).

Another is a questioning attitude... a frame of mind that habitually asks (before the job is placed in the shop for fabrication): "Have the pre-fabricated sub-assemblies been so planned that the field work is minimized and simplified as much as possible?" Highly skilled Midwest piping engineers carefully analyze every job with this question in mind.

For power plant or process, the customer gets the most for his money when he buys Midwest Piping.





Main steam piping at Kyger Creek Plant which has a capacity of 1,075,000 kw and is the largest power plant piping contract (combining fabrication and erection) ever performed by a single contractor.

#### MIDWEST PIPING COMPANY, INC.

Main Office: 1450 South Second St., St. Louis 4, Mo., PLANTS: ST. LOUIS, CLIFTON, N. J. and LOS ANGELES

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MAMI 34—2103 LE JEUNE RD. \*\*NEW YORK 7—50 CHURCH ST,
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767

AND CONSTRUCTION
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## FLOORS, MACHINES, WALLS AND CEILINGS AND EXTERIOR OF THIS PLANT ARE TRUSCON PROTECTED . . . EACH BY A SPECIALIZED COATING DESIGNED TO PROVIDE MAXIMUM WEAR AND PROTECTION

By following the Truscon consultants' recommendations, the Purchasing Agent and Plant Engineer in this plant know that each piece of property and equipment receives the best protection that modern paint chemistry can offer.

Because of Truscon Laboratories' nearly 50 years experience and reputation in the field of specialized maintenance coatings, you, too, can rely on:

TOP QUALITY... Finest ingredients and best techniques of formulating characterize all Truscon products.

**DEPENDABLE PERFORMANCE . . . All Truscon products undergo exhaustive field** testing for wear, weathering, color retention and coverage, before they are placed on the market.

GOOD SERVICE AND FAST DELIVERY . . . A Truscon factory branch in your area assures complete inventories and trained personnel—immediate delivery and service are available to you at all times.

FREE CONSULTATION . . . Truscon consultants are factory trained in the proper selection of specialized coatings for all conditions—alkaline, acid, rust, moisture, etc., and are at your disposal at all times for consultation with your own staff.



For More Information Circle No. 291 on Inquiry Card-Page 17

James M. Mask has been appointed director of purchasing at Slick Airways, Dallas, Texas. Mr. Mask has 15 years experience in the purchasing profession, most of it in aviation and aviation-



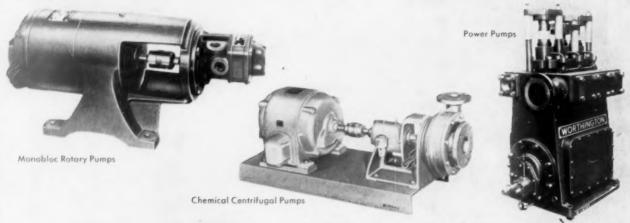
James M. Mask

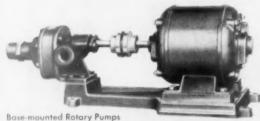
related industries. He has been buying supervisor in the electronics section of the Texas division of Collins Radio Co., Dallas for the past three years. Prior to this he spent nine years as assistant director of purchasing for Chicago & Southern Airlines, which has merged with Delta Air Lines. He was assistant purchasing agent in 1942 for the Dunn-Smartt Construction Co. The following year he was a buyer for McDonald Aircraft Corp., Memphis, Tenn.

E. K. Smith has been made purchasing agent for Reserve Mining Company, Duluth, Minn. Mr. Smith had formerly been employed by Armco Steel Corp., Middletown, Ohio, one of the joint owners of the company. He joined Armco in 1935, became purchasing agent for the Fabricating Division of that company in 1942. Nine years later, he was transferred to the company's general offices as buyer in the purchasing department.



## You get more product,





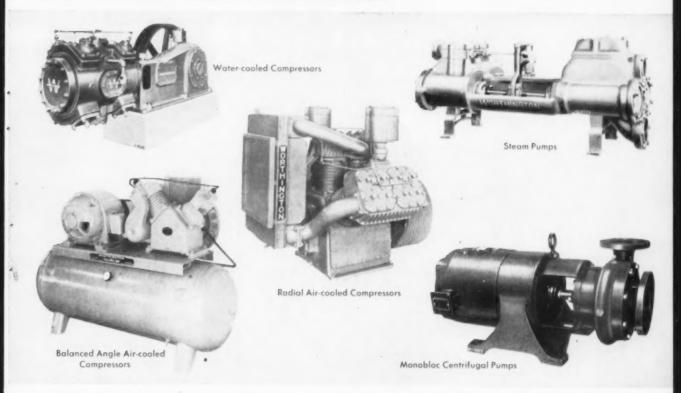
More Product. You never need compromise when you select from this complete pump and compressor line. Since your Worthington distributor carries the broadest line of air and fluid handling equipment on the market, you can depend on his unbiased recommendations. (Distributors have told us that they'd have to carry as many as four different lines to match Worthington for completeness.) He also handles top brands of accessories—an important consideration when buying a "packaged" installation.

## WORTHINGTON

6 inside men \$426,438 worth of stock More Service. Mr. Average Worthington Distributor is way above average when it comes to service. It's no surprise to find that he has 10 customer representatives, 6 inside men and carries a whopping \$426,438 worth of stock. The 205 industrial distributors handling the Worthington line are located in 46 states of the Union. For the name of the one nearest you and a copy of the 1957 Pump and Compressor Catalog, write to Section PC-710, Worthington Corporation, Harrison, N. J.

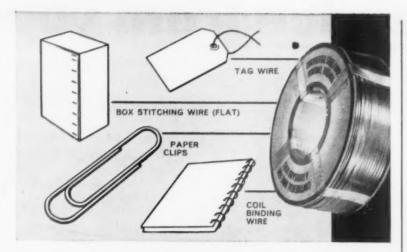


## more service from your

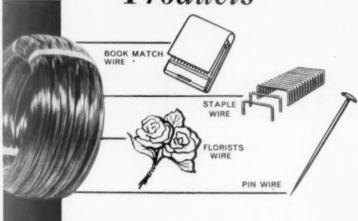


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## Fine and Specialty Wire for Super Fine —— Products



• You are probably closer to Continental Wire than you think. It could be that your very shoes, the book matches in your pocket or the paper clips in your desk—were made using dependable Continental Fine Wire! That's because Continental is preferred by hundreds of leading firms for literally thousands of different fine wire applications. For super fine products—you, too, should try Continental Fine and Specialty Wire, available in many sizes, of almost any temper, finish or analysis, in low carbon and medium low carbon steels.

For the finest in fine wire-call in Continental!

#### CONTINENTAL

STEEL CORPORATION . KOKOMO, INDIANA

Wire Specialists for over half a Century PRODUCERS OF: Manufacturers' Wire in many sizes, tempers, and finishes, including Galvanized, KOKOTE, Flame-Sealed, Coppered, Tinned, Annealed, Liquor Finished, Bright, and special shaped wire. Also Welded Wire Reinforcing Fabric, Nails, Continental Chain Link Fence, and other products.

For More Information Circle No. 294 on Inquiry Card-Page 17

## purchasing people

The appointment of William J. Voss as director of purchasing for the Industrial and Television Tube Divisions has been announced by Allen B. Du Mont

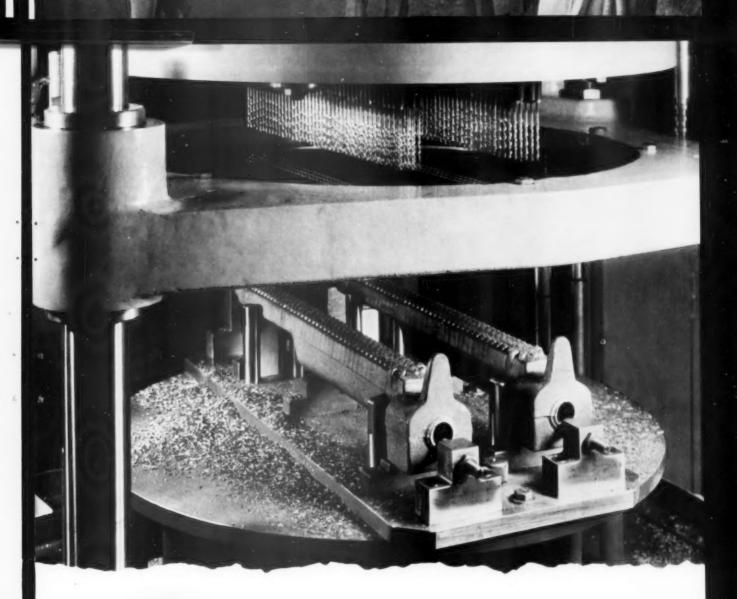


William J. Voss

Laboratories, Inc., Clifton, N. J. The duties of his new position will be added to Mr. Voss' previous responsibilities as purchasing manager for the industrial relations department, general superintendent's department, and general quality control. Prior to joining the organization in 1945, Mr. Voss was with Keuffel & Esser Co., Hoboken, N. J. for eight years. He was also associated with Western Electric Co., Kearny N. J.

Two promotions have been announced by Sawyer's Inc., Portland Oregon. Duane Meyer has moved up to the plants service position and William Kirby has been assigned his former position as supplies buyer in the purchasing department. Mr. Kirby has had several years of purchasing experience with Stereocraft Engineering Company and for the last year has been doing supplier contact work in the product development department of Sawyer's.

For More Information Circle No. 295 on Inquiry Card—Page 17→ PURCHASING



Uniform quality
and high performance of
CLE-FORGE High Speed Drills
can help you reach
production quotas

#### COSTLY "DOWN TIME" REDUCED!

- You can keep your drilling operations on schedule with CLE-FORGE High Speed Drills. These fine quality tools give superior performance on every set-up... and you can rely on their uniformity day after day, month after month, year after year.
- ♦ Why not ask a Cleveland Service Representative for suggestions on reducing "down time" and increasing production in *your* shop? Contact our nearest stockroom, or . . .

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#### YOU QUICKLY SENSE

that "expert feeling" with a Billings drop forged "C" Clamp in your hand. It has a rugged strength (notice rib body design) with less weight, parts skillfully engineered to perform as a unit plus the standard of quality you so well know — it's a Billings tool!

For "C" Clamps and other wrenches and tools by Billings ....CALL YOUR BILLINGS DISTRIBUTOR.

BILLINGS

WRENCHES SHOP TOOLS

THE BILLINGS & SPENCER CO. HARTFORD 1, CONN.

For More Information Circle No. 296 on Inquiry Card—Page 17

## purchasing people



Meredith L. Addy

Meredith L. Addy has been named purchasing agent for John Wood Company, Heater and Tank Division, Conshohocken, Pa. Mr. Addy became associated with the company in 1929 in the Conshohocken plant prior to entering the purchasing department in 1931. Later he became assistant purchasing agent to Joseph C. Henderson, who retired this year, after 45 years of outstanding service. Mr. Henderson joined the company when there was but one small plant. It has now expanded to include ten plants in the U.S. and Canada.

The appointment of W. J. Lohmeyer, Jr., to the executive sales staff has been announced by Jessop Steel Company, Washington, Pa. Mr. Lohmeyer came to the company from Latrobe Electric Steel Company where he served as sales manager in the Pittsburgh district. His 14 years experience in the steel industry includes service with the United States Steel Corp.

FOR MORE INFORMATION
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INQUIRY CARD—PAGE 17



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The American Laundry Machinery Co., Rochester, N. Y. Atlas Foundry Co., Detroit, Mich. Banner Iron Works, St. Louis, Mo. Barnett Foundry & Machine Co., Irvington, N. J. Blackmer Pump Co., Grand Rapids, Mich. Centrifugally Cast Products Div., Shenango Furnace Co., Dover, Ohio Compton Foundry, Compton, Calif. Continental Gin Co., Birmingham, Ala. The Cooper-Bessemer Corp., Mt. Vernon, Ohio and Grove City, Pa. Crawford & Doherty Foundry Co., Portland, Ore. DeLaval Steam Turbine Co., Trenton, N. J. Empire Pattern & Foundry Co., Tulsa, Okla. Florence Pipe Foundry & Machine Co., Florence, N. J. Fulton Foundry & Machines Co., Inc.,

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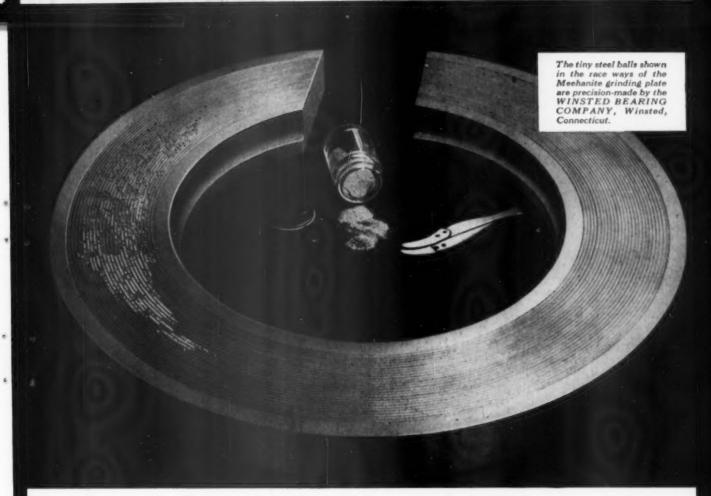
SEND FOR FREE BULLETIN

"Casting Soundness Can Be Controlled" Write today to Meehanite Metal Corporation, Department 2B, 714 North Avenue, New Ro-

chelle, New York.

MEEHANITE®

For More Information Circle No. 297 on Inquiry Card—Page 17



## Miniature steel balls are ground perfectly round on grinding plates cast in Meehanite metal

The fine grain structure and uniform solidity of Meehanite grinding plates enable the Winsted Bearing Company of Winsted, Connecticut to make miniature steel balls to the exacting requirements of the precision industries.

These exceptionally dense grinding plates, cast in quality controlled type "GA" Meehanite metal, provide long service life, maintain dimensional accuracy and can be heat treated without fear of distortion. In addition, Meehanite plates have high tensile strength (over 50,000 psi), high modulus of elasticity, low co-efficient of thermal expansion, excellent wear resistance and good machinability.

The tiny steel balls shown are used in miniature bearings, ball point pens and other precision instruments. They are made with the highest degree of uniformity and dependability. Each ball must be spherical within three to four millionths of an inch, can vary in size no more than five millionths of an inch and the surface finish must be better than half a micro-inch.

Meehanite grinding plates have been used by the Winsted Bearing Company for over six years with very satisfactory results.

If you would like more detailed information about the physical properties of Mechanite casting, write



Over 20,000 steel balls ground perfectly round on Meehanite grinding plates are held in the teaspoon. The hermetically sealed glass jers contain over 50,000 balls.

today for Bulletin AR-130 "Casting Soundness Can Be Controlled."

MEEHANITE BRIDGES THE GAP BETWEEN CAST IRON AND STEEL®

### MEEHANITE METAL

MEEHANITE METAL CORPORATION, NEW ROCHELLE, NEW YORK



## purchasing people

John R. Welsh has been named assistant general purchasing agent of American Brake Shoe Company, New York. A member of



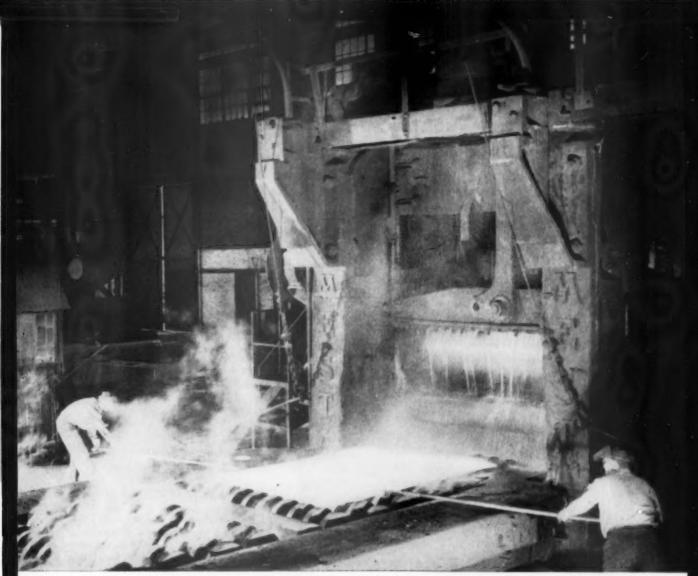
John R. Welsh

the company's purchasing department in New York since joining the firm in 1946, he was purchasing agent for ferrous materials before his new appointment.

A new district sales office for electronic components has been established by General Electric in Charlotte, N. C. Robert B. Callahan has been named district sales manager with new offices at 109 West Third Street, Charlotte. Mr. Callahan will be responsible for sales to distributors of electronic tubes, high fidelity equipment, semiconductor products and specialty electronic components. His district includes the areas of Charlotte, Columbia, Greensboro, Winston-Salem, Raleigh and Roanoke.

Richard L. Hoff has been promoted to assistant manager of pulp sales for Riegel Paper Corp., New York. He was formerly at the company's Milford mill where he was quality control director. Mr. Hoff will be located in the New York office.

For More Information Circle No. 299 on Inquiry Card—Page 17→ PURCHASING MEEHANITE METAL CORPORATION, NEW ROCHELLE, NEW YORK



Hot slab rolling mill

One way "to keep 'em rolling"...

### Never take electrical power for granted!

The vital nerve center of every steel mill is its vast network of electrical control and power circuits—wires and cables that must not fail.

Since the insulation is the heart of the cable . . . and since only Okonite (insulation specialists since 1878) produces cables by all four insulating methods: strip, dip, extrusion and taping . . . our engineers are in a completely unpreju-

diced position when it comes to recommending the right type of cable for your circuit.

Don't wait for expensive electrical failure to prove to you that—in cables—the only bargain is absolute reliability.

For a frank, down-to-earth discussion on cable insulating methods, write for Bulletin PG-1106-A. The Okonite Company, Passaic, N. J.



where there's electrical power... there's OKONITE CABLE



#### Mark of Maximum Do-Power Per Dollar

When you're figuring finished product costs, it's what a processing product *does* for you per dollar that counts.

That's why Houghton's research always goes after processing problems from a finished product viewpoint—the way you'd do it yourself. It's the same with lubricants, hydraulic oils and fluids, packings, leather belting, or any one of more than a thousand Houghton products available to industry today.

It is also the reason why so many Houghton products are famous throughout industry. In test after test, it's the Houghton product that really costs less in the long run—because it has more do-power per dollar.

That's what we mean when we say, "You can always count on Houghton for the newest first, the best always."

METAL WORKING, PAPER AND TEXTILE PROCESSING PRODUCT



For More Information Circle No. 300 on Inquiry Card-Page 17

purchasing people

William R. Patton has been named director of purchases for Sylvania Electric Products Inc., New York, He previously was



William R. Patton

manager of foreign operations of Argus Cameras, Inc., which became the Argus Cameras Division of Sylvania at the beginning of this year. Earlier he had served as director of purchases for Argus for more than five years. Mr. Patton was located in Stuttgart, Germany, as manager of foreign operations, and was responsible for purchasing contracts throughout Europe.

The election of Joseph W. Greene as vice president of sales has been announced by Crane Co., Chicago, Ill. Mr. Greene, who has moved up from his post as director of industrial sales, will head a realigned department organization which will coordinate industrial, plumbing and heating-air conditioning sales previously conducted on a divisional basis. He will also be responsible for the direction of the company's marketing research and advertisingsales promotion activities. Charles W. Lovelace, manager of the valve and fitting department, has been named to succeed Mr. Greene as director of industrial sales.



That coined extrusion gives this Marsh sector gear a broad face . . . for smooth, non-binding meshing with the pinion gear . . . for longer life . . . more years of gauge accuracy.

This is an exclusive feature of the Marsh
Mastergauge. But just as exclusively Marsh is the design
and construction you find in every detail of the Marsh
movement . . . the machine-cut teeth in the hardened
stainless steel sector and pinion gears, held to watchmaker's precision by Marsh-developed production methods
. . . the self-lubricating, frictionless effect achieved by using
alternate stainless steel and monel—gears stainless; bushings
"K" monel and so on through all staffs and bearings.

And remember: this is just one example of the minute attention given to *every* part of *every* gauge—an example of the thoroughness that has made Marsh instruments "The Standard of Accuracy."





MARSH GAUGES

MARSH INSTRUMENT CO. Sales Affiliate of Jas. P. Marsh Corp. Dept. G. Skokie, III.

Marsh Instrument & Valve Co. (Canada) Ltd., 8407 103rd St., Edmonton, Alberta

> Houston Branch Plant: 1121 Rothwell St., Sect. 15, Houston, Texas

Pressure Gauges . Thermometers . Water Regulating Valves . Heating Specialties

For More Information Circle No. 301 on Inquiry Card-Page 17

# FORGED STEEL FOR SURPLUS STRENGTH H 1600 Aultless CASTER

#### **EXCLUSIVE HORN CONSTRUCTION RESISTS SHOCKS**

Faultless design engineers drew on a background of more than fifty years experience with caster problems when they perfected an exclusive heavy duty horn design pronounced the most durable forged steel construction ever offered in a caster.

Cutaway illustration shows the large diameter raceway and large ball bearings that carry the load around machined hardened surfaces. A Timken combined radial and thrust bearing is nested in the horn top plate.

If your movements of excessively heavy loads are encountering high impact shocks, your problem will be solved with this new H1600 Series Forged Steel Caster. Your nearby Faultless Industrial Distributor maintains a substantial inventory of Faultless Casters for immediate delivery. Call him today about this new H1600 Series Caster.



1. HEAVY DROP FORGED CASTER TOP PLATE machined for load bearing balls.

2. HEAVY DROP FORGED HORN TOP PLATE machined for load and thrust bearing raceways.

3, SWIVEL HEAD consists of a complete row of hardened ball bearings operating in lubricated machined raceway and Timken combined radial and thrust bearing. Raceways case-hardened.

4. CASTER HORN LEGS made of heavy steel, deeply embossed and formed for additional strength. Embossing forms shoulder to prevent axle from turning.

S. ADJUSTABLE KING BOLT 1" in diameter, assembled with lock-nut and securely staked.

6. AXLE BOLT 1" in diameter. Bolt head held against horn embossing shoulder to prevent axle turning. Heavy duty lock nut is standard.

7. WHEEL — Forged steel wheel supplied in 6" size. Semi-steel wheel supplied in 8" size. Vulcanized rubber tread wheel supplied in 6" and 8" sizes. Roller bearing standard in all wheels. Timken tapered bearings can also be supplied in forged and semi-steel wheels.

8.GREASE FITTINGS easily accessible for fast, thorough lubrication of swivel head and wheel.

9. FINISH -lustre green lacquer.

FAULTLESS CASTER CORPORATION

EVANSVILLE F, INGIANA

Offices in Atlanta, Baltimore, Basten, Beffolo, Chicago, Claveland, Dallas, Detroit, Grand Rapids,

High Paint, Indianapulls, Les Angeles, New Orleans, New York, Philodelphia, Partland,

Essentia, St., Lante, Consults, Startland, Orleins

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## purchasing people

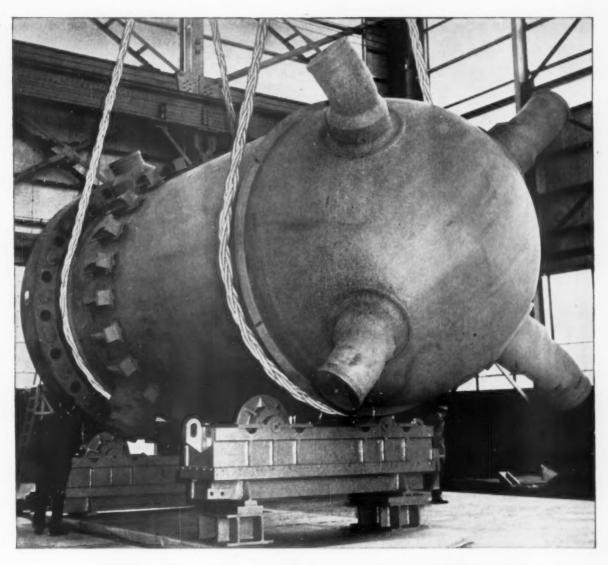
A. W. Roark has been named western division manager for the Atkins Saw Division, Borg-Warner Corp., Indianapolis, Ind. He



A. W. Roark

will supervise all Atkins saw sales in the 11 western states with headquarters in Portland, Oregon. For the past five years, Mr. Roark has been sales manager with Northwest Logger Supply, Inc. Prior to joining this firm, he had been with Atkins for an uninterrupted 23 years.

Appointment of A. R. Eimer to the position of general manager of purchasing, Standard Oil Company of California, has been announced. Mr. Eimer succeeds C. V. Lane who has retired after 49 years service with the company. W. H. Klarquist has been named manager, purchase and stores, Western Operations, Inc., also succeeding Mr. Lane who held both posts subsequent to formation of Western Operations, Inc. several months ago. E. A. Schlueter has become assistant manager, purchase and stores, Western Operations, Inc., Mr. Eimer's former post. Mr. Eimer has been with the company since 1922 when he joined the engineering department.



## The husky Slings that lifted world's heaviest atomic unit

This is the 150-ton shell of a reactor vessel, and it is said to be the heaviest unit of atomic equipment in the world. With head in place, the vessel's weight is increased to a staggering 235 tons.

Built by the Chattanooga plant of Combustion Engineering, Inc., the vessel has an inside diameter of 9 ft and steel walls 8½ in. thick. It will be used in America's first commercial-sized nuclear power station. Prior to shipment it was exhibited by the builder, and the photograph above shows the shell on display.

Lifting and moving the big shell was quite a feat. Two tremendously strong Bethlehem slings were used, and the slings themselves could hardly be called pygmies. Fifty-nine ft in length, they were the eight-part-braided type with ropes of 1¼-in. diam. Rope construction was 6 x 37, which of course gave a high measure of flexibility.

You yourself may never require such husky slings. But please remember, Bethlehem can furnish any size or type of sling, standard or special. Whatever your needs, Bethlehem can meet them. Promptly, too. Call on us for grommets, single-part or braided slings, any type of bridle, or anything that will help meet a special problem.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation Export Distributor: Bethlehem Steel Export Corporation



#### BETHLEHEM STEEL



Cleveland No-LAP Abrasive Mandrels

#### MEET EVERY NEED

... in sanding, polishing and cleaning up.

#### CLEVELAND ABRASIVES

give long wear, and their constant cutting surface means improved performance!

Whether the job be great or small, Cleveland Abrasives save time, money and effort.

Sleeves and Expanding Drums, Belts, Smoke Hole Cleaners and Abrasive Cartridge Rolls and

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Send for our

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SAMPLES gladly

furnished of the grit

and size you desire.

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> ABRASIVE DIVISION

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ROCHESTER, N. Y.

WEST HARTFORD.

purchasing people

International Business Machines Corp., New York, has appointed William M. Paradise as purchasing agent for the com-

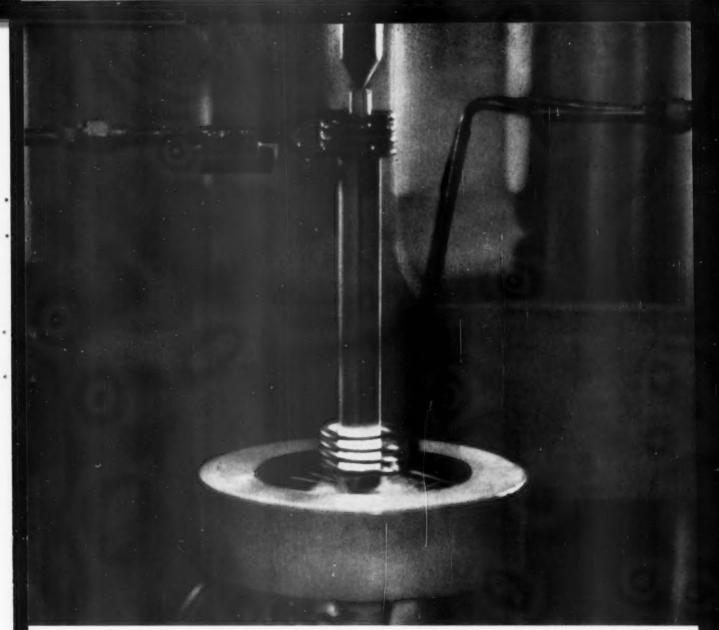


W. M. Paradise

pany's new manufacturing plant at Burlington, Vermont. Mr. Paradise, who has been serving as assistant purchasing agent for the company's Poughkeepsie, N. Y. plant, joined the company in 1946 as a draftsman and then transferred to the quality control department. In 1949 he was named manager of a machining department and a year later became manager of final parts inspection. He held various other managerial positions until his appointment as assistant to the purchasing agent in 1954.

The election of George W. Stamm as vice president and general manager of sales has been announced by Crucible Steel Company, Pittsburgh, Pa. Mr. Stamm previously was general manager of sales. He succeeds James D. Glenn, who had asked to be relieved of his responsibility as vice president of sales because of illness. Mr. Glenn will remain with the company on a consulting basis.

For More Information Circle No. 305 on Inquiry Card-Page 17→ PURCHASING



Ketos shaft being induction hardened to Rockwell 55-56, while ends remain soft for final machining. Photographed at Control Instrument Co., Inc., Brooklyn, N. Y.

#### KETOS has wide hardening range with minimum volume change...

Ketos is a low priced alloy tool steel that can be hardened from low temperatures with practically no volume change. It has deep hardening qualities, and a fine grained structure, that make it desirable for many production parts.

That's why nondeforming Ketos is well suited not only for most tool steel applications such as gauges, dies, and taps but also for close-tolerance, wear-resistant parts like the actuator bar shown in the induction heating unit above. The thin contact edges of this particular part withstood a "life test" of over 4-million high speed blows. No other steel tested lasted more than 1-million cycles before it chipped and failed.

If Ketos sounds like the steel you should be using, call your nearby Crucible warehouse. Stocks of Ketos and dozens of other special tool steels are large, delivery fast. Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.

CRUCIBLE first name in special purpose steels

**Crucible Steel Company** of America

Canadian Distributor - Railway & Power Engineering Corp., Ltd.



lubrication at high speeds

These Lubricants provide the all-necessary lubrication for those modern, high speed machines operating up to 30,000 revolutions per minute.

#### LUBRIPLATE

No. 205—A superior and protective lubricant for anti-friction and plain sleeve grease type bearings, operating at speeds in excess of 5000 R.P.M. Widely used for lubrication of high speed bearings on woodworking machines, textile spindles, grinder arbors, etc.

#### LUBRIPLATE

Nos. 0, 1 and 2 are highly specialized light fluid type lubricants with high film strength. Their characteristics are excellent at both low and elevated temperatures. May be applied by conventional means.

For nearest LUBRIPLATE distributor see Classified Telephone Directory. Write for free "LUBRIPLATE DATA BOOK"... a valuable treatise on lubrication. LUBRIPLATE DIVISION, Fiske Brothers Refining Company, Newsrk 5, N. J. or Toledo 5, Ohio.



For More Information Circle No. 306 on Inquiry Card—Page 17

## purchasing people

The appointment of John Cattanach, Jr. as manager of sales of tubular products and cold finished steel bars at the Buffalo plant of



John Cattanach, Jr.

Joseph T. Ryerson & Son, Inc., Chicago, Ill. has been announced. Mr. Cattanach joined the company in 1933 and was engaged in general sales work in the office until his appointment as a field representative in 1941. He remained in this capacity until his promotion to the managerial position.

Walter J. Roberge has been named manager of the purchasing department for Lone Star Gas Company and its wholly owned subsidiary, Lone Star Producing Company, Dallas, Texas. The former assistant manager succeeds W. G. Nash who retired recently under the company's insurance-pension program. Mr. Roberge started with Lone Star as a mail boy in 1922. He held various positions in the purchasing department until 1947, when he became a buyer. He was named assistant manager of purchasing in 1956.

He is a member of the Dallas Purchasing Agents Association and Petroleum Buyers section of the N.A.P.A.

## DARNELL

Always SALVAR and ROCA

CASTERS AND WHEELS

offer more all the way



RUBBER TREADS . . . a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads.

RUST-PROOFED . . . by zinc plating, Darnell Casters give longer, care-free life

LUBRICATION . . , all swivel and wheel bearings are factory packed with a high quality grease that "stands up" under attack by heat and water.

STRING GUARDS . . . Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

Pree Manual
DARNELL CORPORATION,

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DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
40 WALKER STREET, NEW YORK 13, NEW YORK

For More Information Circle No. 416 on Inquiry Card—Page 17

PURCHASING

### Here's the Inside Story on **LAMSON** Tapping Screws



ADVANTAGES OF LAMSON **TAPPING SCREWS** 

I Full threads to the head.

2 High stripping strength.

3 Correct points for low driving torque.

The key to the efficiency and holding power of Lamson Tapping Screws is the controlled

fit between the screw threads and the hole into which they are driven. The enlarged section shows how threads are formed when the right sized screw is used in the correct diameter hole.

INSIST UPON LAMSON TAPPING SCREWS, GUARDIAN OF YOUR ASSEMBLY LINE!

## LAMSON & SESSIONS

will be glad to recommend hole sizes and screw sizes for your requirements. Send for your free brochure on Small Screws for additional information.



LAMSON & SESSIONS

1971 WEST 85th STREET - CLEVELAND 2, ONIO - PLANTS AT CLEVELAND AND KINT

## Phelps Dodge WIDEST RANGE OF HIGH



Consult Phelps Dodge for the correct answer to your requirements, regardless of voltage or type!

## offers Industry's VOLTAGE POWER CABLE!

Only Phelps Dodge has manufacturing experience and operational "know how" with the entire range of high voltage cables which includes: oil compression, gas compression, high pressure oil, high pressure gas, pipe type cables; medium pressure gas, low pressure oil-filled, low pressure gas, submarine and solid type cables.



Low Pressure, Gas-Filled Cable, from 15 KV to 44 KV.



Submarine Cable, from 15\* KV to 35 KV.



Solid Type Cable, from 15\* KV to 69 KV.







\*Lower voltage cables in this class also available.

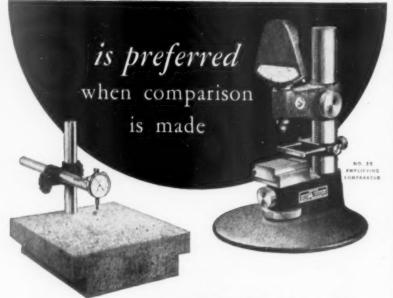


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CORPORATION

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# AMES



MODEL 130 GP.



For fast, accurate measurements, Ames Dial Comparators are the choice of quality control men everywhere. You get definite, impersonal readings directly from the dial. There's no guesswork or figuring.

Special comparators are available for measuring resilient materials such as rubber, paper, etc., and for measuring non-yielding materials such as sheet metal, glass and plastic. Write for complete details.





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For More Information Circle No. 309 on Inquiry Card—Page 17

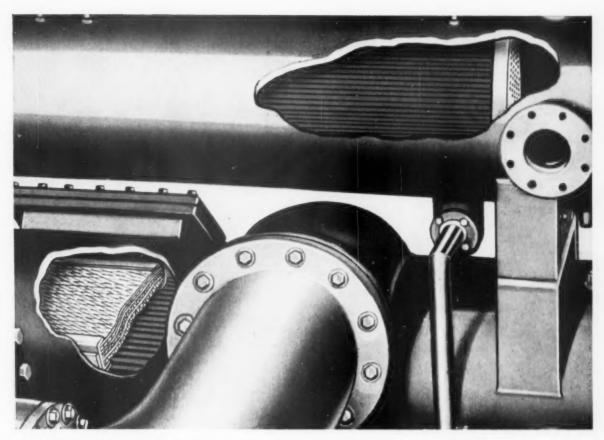
Appointment of Robert H. Graham as chief purchasing agent has been announced by the Davol Rubber Company, Providence,



Robert H. Graham

R. I. He has been associated with the company since 1953 as assistant purchasing agent. An alumnus of Bryant College, Mr. Graham is a member of N.A.P.A.

Robert A. Engelhardt has been appointed purchasing agent of Michigan Limestone Division, of U. S. Steel Corp. Detroit, Mich. Mr. Engelhardt succeeds F. G. Corregan whose retirement after 35 years of loyal service was announced simultaneously. Engelhardt began his employment with U.S. Steel in 1935 as a messenger in the Pittsburgh offices of the Carnegie-Illinois Steel Corp. In 1936 he was transferred to Pittsburgh Limestone, a predecessor company of Michigan Limestone Division, where he served in various capacities until transferred to Detroit in 1951, at which time he occupied the position of chief clerk in the purchasing department. In 1952 Mr. Engelhardt was appointed buyer and in 1956, assistant purchasing agent. Mr. Engelhardt is a native of Pittsburgh, Pa., and attended Carnegie Institute of Technology. He is a member of the N.A.P.A.



## How The Trane Company Condensed a Condenser

- and a Water Chiller too!



WOLVERINE TRUFIN
Type S/T
Note the integral fins.

In the illustration above you can see exactly where Wolverine Trufin® Type S/T is used in both the condenser and water chiller of a Trane CenTraVac unit. Trufin was used in the design of these applications because it was recognized that Trufin provides more than twice the heat transfer surface of plain tube—extracts more BTU's per foot of tube.

Explaining why his company specifies Trufin for this job, a Trane Company engineer reports:

"The principal reason for using Trufin is the advantage of increased surface over what we would be able to obtain from straight tubing. In fact, we would have to use so many more lineal feet of plain tube that in many cases the CenTraVac would become too large in size to be installed in existing buildings where space always seems to be at a premium. You can readily see from this the importance we attach to Trufin."

If your product requires heat transfer, Wolverine Trufin can help you just as it is helping the Trane Company. For complete information concerning sizes, alloys and design, write for the Trufin Catalog.

Wolverine Trufin is available in Canada through the Unifin Tube Company, London, Ontario

#### CALUMET & HECLA, INC.

CALUMET DIVISION
WOLVERINE TUBE DIVISION
FOREST INDUSTRIES DIVISION
GOODMAN LUMBER COMPANY
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EQUIPMENT COMPANY LIMITED



#### WOLVERINE TUBE

Division of Calumet & Hecia, inc. 1427 CENTRAL AVE., DETROIT 9, MICH.

Manufacture's of Quality Controlled Tubing and Extruded Aluminum Shapes

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES

EXPORT DEPARTMENT, 11 EAST AUTH STREET, NEW YORK 16, NEW YORK

For More Information Circle No. 310 on Inquiry Card-Page 17



## REGULATOR for Oxygen or Acetylene

A Dockson safety engineered product. Best quality materials and workmanship throughout. Preset, automatic first stage assures accurate secondary pressure from full to empty tank. Spring-loaded, self-closing safety valve. Forged brass body and bonnet. Filtered inlet. Precision, interchangeable parts. No special tools needed.

Write for complete-line Welding Catalog and name of nearest distributor.



For More Information Circle No. 311 on Inquiry Card—Page 17

### purchasing people

The establishment of a New York sales office for Delta Tank Manufacturing Company, Baton Rouge, La., has been announced. The new office at 122 East 42 Street is the first in the northern United States. Louis J. Persbacker will direct operations in New York.

Russell W. Wetjen has been named sales manager for petroleum, LP-gas and industrial meters of the Neptune Meter Company, New York. He succeeds Walter H. Sieger, who has been elected president of Revere Corp. of America, a subsidiary of the company.

B. Stone Leizear, technical and administrative assistant in the purchasing division, Bureau of Supplies and Accounts, Navy De-



B. Stone Leizear

partment, Washington, D. C., has retired after more than 46 years of government service. He began his Navy career in the Bureau of Ordnance in 1910. Later he served in the Offices of the Secretary and Assistant Secretary of the Navy, the Office of the Chief of Naval Operations, the Navy Compensation Board and the Bureau of Supplies and Accounts.

#### Big Run Deadline



Carey Delivers on Time

Big run jobs have you on the run? Take a tip from leading firms and consult Carey. Round-the-clock operation, roll fed presses, inventory roll stock and sheeting equipment meet and service any quality demand at substantial savings. Why wait for deliveries when you can call Carey Press...ask for

Art Friedman, Sales Manager . CH 4-1000

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For More Information Circle No. 312
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### IF YOU USE THESE PRODUCTS . . .

send for the world's most complete, illustrated catalog of

ELECTRIC LANTERNS and SAFETY

CANS

#### VALUABLE DATA:

The world's first comprehensive table is lamp and bettery operating information

Migh power searchlights All-purpose hand lights Safety lights and lanterns Flammable liquid SAFETY CANS Oily Waste Cans



For More Information Circle No. 313 on Inquiry Card—Page 17 For More Information Circle No. 314 on Inquiry Card—Page 17->



FRAME. Tough, shock-resistant aluminum alloy. Seals out dirt, dust,

SPUR GEARING. Built like a hoist. Turns practically every ounce of effort into lifting action.

**ANTI-FRICTION BEARINGS.** Assure smooth, easy operation and long service life.

> LOAD CHAIN. Special case-hard ened alloy steel Easily han toughest lifting and pulling jobs. Easily handles

> > SAFE-GUARD HOOKS. Warn of danger when overloaded by open ing slowly. Swivel freely

TOTALLY-ENCLOSED MECHA-

NISM. Working parts protected. Lubrication is permanent type.

> AUTOMATIC LOAD BRAKE. Designed for heavy-duty service. Positive holding power.

HAND GRIP WHEEL. Turns easily to lower or raise hook to engage load

SHAFTS. Tough alloy steel, heat treated for extra strength.

FINGER-TIP CONTROL LEVER.

Changes action from "up" to "down" and into "free-wheeling" with a flick of the finger.

HANDLE FITS HAND. Can't fly back. Only 12" long for easy operation on any job.

#### TUGIT QUALITY PAYS OFF IN SERVICE



Plenty of portable lifting and pulling tools are on the market - but there is only one 'Tugit'. Built like a regular hoist but operated by pumping a handle, it works smoothly at any angle, anywhere.

The smallest 'Tugit' weighs a mere 161/2 lbs. yet can lift or shift a ton with a pull of only 40 lbs. on the handle. The average ratchet-lever hoist requires 36% more effort for the same job. Lifting and lowering action is smooth - loads can be moved as little as 3/32" for accurate spotting.

'Tugit' is tool-box size. It is built tough for extra safety. Maintenance men, assemblers, utility crews, construction gangs, road builders - all find new uses for 'Tugit' every day. 1 and 2-ton sizes available. No other portable lifting and pulling tool

offers so much in quality and performance. Ask your "Shaw-Box" Distributor for a demonstration or write us for Bulletin 388.

HERE ARE A FEW OF THE THOUSANDS OF JOBS 'TUGIT' CAN DO BETTER

Move machinery and motors . . . assemble parts stretch cable . . . join conveyor belts and erect fences . . . unearth posts, piping . . stumps, boulders . . . lift truck tires and heavy repair parts . . . operate valves, freight car and hopper doors , lift furnace and vat covers ... install overhead equipment.



SAFETY HOOKS can be provided on 'Tugit' to "lock in" slings and other attachments used to support loads.

'TUGIT' CARRYING CASE. Durable dust-tight canvas, sewed and riveted to wooden base plate. Has slide fastener and leather handle. Makes Tugit' easy to transport from job

> 'TIPIT'. A link chain sling for tipping engines, motors and other units in tight spots. Attached to 'Tugit' or a regular hoist. Can be operated with any ½" wrench. Weighs 81/4 lbs. Capacity: 1 ton.





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SHAW-BOX" and LOAD LIFTER Cranes, BUDGIT and LOAD LIFTER Horsts and other lifting specialties, Other Divisions produce "ASHCROFT" Gauges, Valves, CONSOLIDATED Safety and Relief Valves, "AMERICAN, and AMERICAN MICROSEN, Industrial Instruments, and Aircraft Products."

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#### SPEEDS UP DRILLING 25%





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OF COPPERWELD STEEL COMPANY

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#### Brainard's New Pneumatic Stretcher and Cutter for Heavy Duty Strapping . . . . .

... offers these Advantages

- \* Only Pneumatic Heavy Duty Strapping tool of its kind.
- ★ Specially designed for heavy duty strapping on pallets, skids, car bracing, and large bundles.
- \* Pneumatic power insures uniform tension on each band.
- \* Pneumatic power does the work. Eliminates operator fatigue.
- \* Rugged construction assures minimum down time for tool maintenance.
- \* Tool is light weight and portable.
- \* Because of less operator fatigue, tool is more productive during work shift.
- \*Operates on any flat stock or flat package.

#### Brainard Steel Strapping

SHARONSTEEL

Brainard Steel Division, Sharon Steel Corporation Griswold Street, Warren, Ohio

# and THAT'S ONLY PART OF OUR STORY.



#### **Brainard Integrated Production** Insures a Constant Supply **Heavy Duty Strapping**

As a division of Sharon Steel, Brainard can be sure that the steel used for strapping has been developed to meet their own exacting standards, and, more important, they can assure the customer of a constant supply of strapping in all heavy duty sizes and gauges: 2" x .050, 11/4" x .050, 34" x .050, 11/4" x .035, 3/4" x .035, 3/4" x .028.



#### SPECIAL HEAVY DUTY STRAPPING SERVICE

Brainard has a team of specialists in the use of heavy duty strapping for steel mills, car-loading, palletizing, etc. Why not contact Brainard and ask about this service?

#### Brainard Steel Strapping

Griswold Street.

Please send more information about Brainard's complete strapping service.

NAME

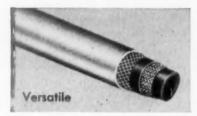
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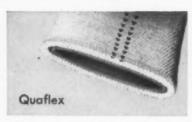
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# Industrial HOSE?

Your Quaker Rubber & Quaker Pioneer distributor has these—and other rugged hoses in stock and ready to go!



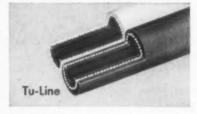
All. For heavy duty work. Lightweight, highly flexible. Resists weather damage and abrasion. Non-porous tube of oil resistant rubber compound. Rugged Neoprene cover.



FIRE. For long service in interior fire protection. Resilient, flat-folding. Flexible, crackresistant. Leak-proof tube bonded to strong single jacket cover.



STEAM. For general steam-handling jobs. Strong, light, flexible, kink-proof. Steel wire and glass reinforcing for extra safety. Resists high pressures and temperatures up to 368°F.



**WILDING.** Especially effective on portable welding dollies. Kink-free. Resists abrasion and welding gases. Two lines securely bonded together form a single safe hose unit.



WATER. For general water service at medium pressures. Light weight, easy to handle. Non-porous tube resists water absorption. Rugged, slow-aging cover resists abrasion.

Save time and money. Call your Quaker Rubber-Quaker Pioneer distributor first, when you need hose or other industrial rubber products.

For further information, write to: H. K. Porter Company, Inc., Quaker Rubber Division, Philadelphia 24, Pa., or Quaker Pioneer Rubber Division, Pittsburg, Calif.



QUAKER RUBBER DIVISION

H. K. PORTER COMPANY, INC.

For More Information Circle No. 317 on Inquiry Card-Page 17



Republic Manufacturing Company, Cleveland, Ohio, has announced the appointment of Lester J. Henderson as vice president



Lester J. Henderson

in charge of sales. Mr. Henderson was formerly general sales manager of the Special Products Division of the Weatherhead Company. He is widely known in aviation and industrial circles, and has served for many years on S.A.E. committees, both aviation and industrial. Mr. Henderson plans to have the company become more active in the aircraft industry, although his first program will be to review their coastto-coast distributor organization. His headquarters will be located at the general offices and main plant in Cleveland.

John F. Snedeker, purchasing agent of Binney & Smith, Inc. New York was elected vice president of the Eighth District of the National Association of Purchasing Agents at a district meeting held recently in Albany. Mr. Snedeker has been a member of the Purchasing Agents Association of New York since 1938. After serving on various committees he was elected President in 1952 and National Director in 1953.

Plan your gear buying with "the book"

You'll be days...

and dollars

ahead

The Boston Gear Catalog No. 56 is "the book" in constant use by men who specify and buy gears and other transmission parts, — for good reasons. They know it lists over 2000 types and sizes of standardized stock gears. They know that Boston Gears are top-rated for precision and performance. And they know, also, they can get

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Why pay more (and wait) for "specials" when you can get Boston Gears FROM STOCK, nearby, to meet any specification? Be cost-wise . . . STAND-ARDIZE. Get your copy of Catalog No. 56. You'll be days and dollars ahead on any transmission job. Boston Gear Works, 74 Hayward Street, Quincy 71, Massachusetts.

BOSTON JEWS





7124 STANDARDIZED TRANSMISSION PRODUCTS

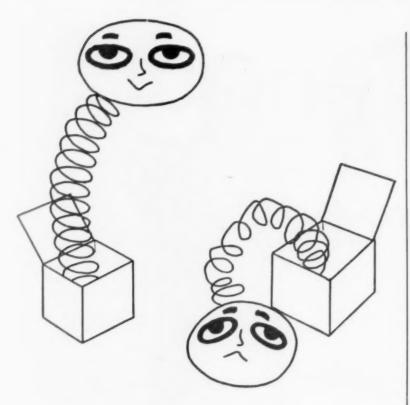








Stock Gears . Sprockets and Chain . Speed Reducers . Bearings . Couplings



#### Some Springs Have It...Some Don't

The difference in spring performance is most often due to the wire or strip used... and there's more to a spring material than just the "bounce". How about other requirements, such as corrosion resistance, high temperature properties, fatigue resistance and low temperature toughness.

When your springs need any of these properties your best bet is one of our alloy spring materials.

Riverside-Alloy Metal Division can supply you with spring wire and strip in stainless steels, nickel alloys, phosphor bronze and beryllium copper. Learn more about our spring materials. Write to

Riverside-Alloy Metal Division,

H. K. Porter Company, Inc., Riverside, N. J.

Send today for our free handbooks



ALLOY METAL WIRE

RIVERSIDE METAL

PRENTISS WIRE MILLS

H. K. PORTER COMPANY, INC.

For More Information Circle No. 319 on Inquiry Card-Page 17

#### purchasing people

The Sorg Paper Company, Middletown, Ohio, has announced the promotion of **Robert L. Foster** to the position of manager of



Robert L. Foster

purchasing. He joined the company in 1934 and was transferred to the purchasing department in 1942, and a year later was advanced to assistant purchasing agent. Mr. Foster succeeds Albert D. Sherman, who has retired after a 40-year career with the company. He held various clerical positions until 1931, when he was made assistant purchasing agent. After his promotion to director of purchases in 1939, Mr. Sherman also was named a director of the company and served in this capacity from 1939 to 1946.

The appointment of Lyle J. Blowers as purchasing agent for the engineering and construction division of Southwestern Engineering Company, Los Angeles, has been announced. Before joining the organization, Mr. Blowers served as project manager for McDonald Brothers Company on a joint venture government contract for the construction of a group of radar bases. Prior to that, he was manager of purchases for Bechtel Industrial Division of the Bechtel Corporation. His responsibilities included purchases, subcontract inspection, expediting, priorities and traffic.



#### Capacity \$100,000 per hour...

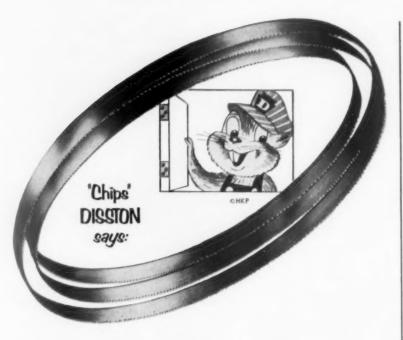
At a hundred dollars for each carton of nickels, and a thousand straps an hour, the arithmetic's fun. Think what you could do with bales of \$100 bills! Maybe it's enough to think what you could do with a thousand straps per hour. Touch a button, and in three seconds the strap is around the carton, sealed, and cut off from the dispenser. Could be any carton . . . or a bundle of hardwood flooring or steel fence posts. True, the machine might take four seconds for a big carton, or six for a whopper. But with machines like this and Signode to help you make the most of them, wouldn't your product cost less to handle, store, ship and receive? To find out, call the Signode man near you, or write:

#### SIGNODE STEEL STRAPPING CO.

2676 N. Western Avenue, Chicago 47, Illinois

Offices Coast to Coast, Foreign Subsidiaries and Distributors World-Wide In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto

For More Information Circle No. 320 on Inquiry Card-Page 17



## "for long, long blade life—choose a DISSTON!"

Does your work call for close tolerance cutting . . . fine edge-holding qualities . . . good finish? Disston Metal Cutting Band Saws give you all that and more —long, long blade life!

**LANCER TOOTH**—Hard edge blade with positive rake angle tooth. Permits high-speed production cutting of non-ferrous metal, wood and plastic. Cuts brass and aluminum solids and Plexiglas with equal ease.

**REGULAR TOOTH**—Hard edge flexible back band saw with finer tooth spacing. Cuts all ferrous metals and thinner sections of non-ferrous metal and plastic. Excellent for sawing angle iron, steel tubing, nickel plate and brass sheets.

Your Disston distributor is the man to see if production is too low and costs too high. He can help you boost one and lower the other.

#### **NEW BOOKLET—YOURS FREE!**

To obtain YOUR FREE COPY of Disston's colorful, information-packed booklet on Metal Cutting Band Saws, write today to Dept. 33, Henry Disston Division, H. K. Porter Company, Inc., Philadelphia 35, Pa.



For More Information Circle No. 321 on Inquiry Card-Page 17



H. F. Froehlich has been named to the expanded post of manager of purchasing and production control at Sherman Products, Inc.,



H. F. Froehlich

Royal Oak, Mich. Mr. Froehlich has had more than 25 years of experience in the purchasing field. He was appointed purchasing agent for the Tractor and Implement Division of Ford Motor Co., Birmingham, Mich., after serving as assistant purchasing agent when the company was called Dearborn Motors. For 21 years he was with Packard Motor Car Co., completing his career there as a buyer. He is a member of the N.A.P.A. and its Detroit chapter.

Harold R. Cockrell has been promoted from expediter to buyer in Chemstrand Corp., purchasing department, Decatur, Ala. Succeeding him as expediter is Kenneth V. Keith who has been working for the Daniels Construction Company as expediter on the company's expansion at Pensacola. Before joining Chemstrand in 1955, Mr. Cockrell was with Sears-Roebuck and Company, Birmingham. He received his B.S. degree from Alabama Polytechnic Institute in 1940.

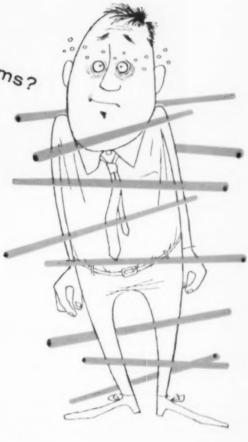
Up to here in tubing problems?

# EVERY INCH OF GM STEEL TUBING MUST PASS AN EXCLUSIVE HIGH-PRESSURE "PLUS" TEST!

When you specify GM Steel Tubing, you get the toughest, most dependable refrigeration tubing made. Every inch of GM Steel Tubing must withstand an exclusive high-pressure hydrostatic test, under conditions far more demanding than any it will ever meet in actual use.

Worried about welds? Tests prove that the weld on every piece of GM Steel Tubing approved for shipment is as strong as the steel itself. What's more, four separate cleaning processes and inspections guarantee the cleanest tubing you can buy. For further information on how GM Steel Tubing can better meet your tubing problems, contact your Rochester Products Sales Engineer or write us direct.

Only GM Steel Tubing undergoes this extreme test of high-pressure solvents to assure maximum strength and cleanliness.





GM STEEL TUBING BY

OCHESTER RODUCTS

Rochester Products Division of General Motors, Rochester, N. Y.



#### developments

#### New Line of Motors Gives More Power in Less Space

More power in less space with less weight—that's what General Electric has achieved by redesigning its line of 40 to 125 hp a-c induction motors. The new motors, which provide greater horse-power for a given frame size, were built in accordance with new standards suggested by the National Electrical Manufacturers' Assn.

For users, the changes mean increased capacity for their different machines since it is now possible to pack more horsepower in a small frame. As an example, GE states that a 125 hp motor can now be placed in a frame formerly used for a 75 hp motor. Original equipment makers are expected to benefit from reduced weight.

#### The Secret Is Better Insulation

GE spokesmen say their rerated motor line, trademarked as Tri-Clad 55, is 20 percent lighter than older units of the same horse-power. Actual weight savings vary between 100 and 500 pound per motor. Overall size of the new motors for comparable horse-power ratings has been reduced an average of 27 percent. The weight and space savings were achieved mainly as a result of improvements in insulation which

makes it possible to use thinner, more effective materials.

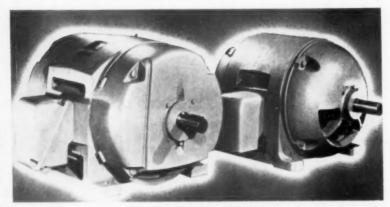
Rerating of the 40-125 hp motor—the first major change in motors of this size in 20 years—is the second phase of GE's motor redesign program. A little over 2 years ago the company completed similar changes in motors in the 1 to 30 hp range. It is expected that other motor manufacturers will soon follow GE's lead in rerating motors in the 40 to 125 hp category.

From the acceptance given previously redesigned motors in the 1 to 30 hp range, it seems likely that the rerated, larger motors will eventually become an industry standard. GE points out that 98% of its orders for small motors specify the rerated design. It expects its newest line to find even quicker acceptance. At present GE plans to keep the price of the new motors in line with former models of the same horsepower.

#### Lower Maintenance Costs

In addition to more horsepower per pound of motor weight, the new Tri-Clad 55 line has been designed for quieter operation

(Please turn to page 264)



More power per pound of motor is one of the benefits of General Electric redesigning of its line of 40 to 125 hp ac induction motors. The new motor (left) is rated at 125 hp while the same size old motor is rated at 75 hp.

For More Information Circle No. 324 on Inquiry Card—Page 17→ PURCHASING

#### Bit manufacturer bites off 20% production increase

SUPERLA Soluble Oil plus technical service add up to improved product output at Chicago Brunner & Lay Rok-Bit Corp.

SUPERLA Soluble Oil, which is now being used by Chicago Brunner & Lay Rok-Bit Corp., has solved a lot of milling machine operating problems for the Company. Soluble oils formerly used separated out of emulsion and turned rancid in use. Oil circulating lines plugged repeatedly. The plant's production rate was not up to capacity because of frequent shutdowns for cleaning of machines and for unplugging of oil lines.

On the advice of Joe Grigas, Standard Oil industrial lubrication specialist, the Company cleaned the machines, then converted them to Superla at a 10:1 dilution.

This is how the change-over worked out. Production was increased 20%. Machine down time was substantially reduced. The Company was sufficiently pleased with the performance of Superla Soluble Oil in milling machines to convert two grinding machines to this oil. Results obtained on the grinding machines: excellent wheel life, good finish and rust protection.

Superla Soluble Oil emulsifies readily with all types of water. It is a stable oil and forms stable emulsions. It does not tend to develop objectionable odors in use nor is it injurious to men, work or machines. Superla Soluble Oil gives good tool life and prevents rust.

Get the facts about SUPERLA Soluble Oil. Your Standard Oil industrial lubrication specialist has them. In any of the 15 Midwest or Rocky Mountain states, one of these lubrication specialists is nearby. Call the one nearest you. Or write Standard Oil Company, 910 South Michigan Avenue, Chicago 80, Illinois.



George P. Gaunt (right) shop superintendent shows rock bit to Joseph D. Grigas, Standard Oil industrial lubrication specialist. Joe is well qualified to assist customers. He has 13 years' experience in such work, has a degree in engineering from Illinois Institute of Technology and is a graduate of the Standard Oil Sales Engineering School.

#### Quick facts about SUPERLA Soluble Oil

- e Emulsifies readily
- e Forms stable emulsion
- Doesn't turn rancid
- e Economical. Requires low emulsion concentrations
- Prevents rusting
- e Non-injurious to men, machines, work
- Gives good tool life



STANDARD OIL COMPANY

(Indiana)

# ANNOU Increased capacity ratings

THE Timken Roller Bearing Company announces an increase in the capacity ratings of most series of Timken® tapered roller bearings. Increases range up to 39%. Most are in the neighborhood of 10%. Some are negligible.

#### **Permits Use of Smaller Bearings**

This increase in capacity ratings makes it possible for many of you to use smaller bearings. Your products can be made more compact. You can save weight. You may be able to reduce the size of your shafts and housings. And you may be able to use Timken bearings in new applications where they have not been practicable in the past.

#### 3 Reasons for Increases

What led to these increases in Timken bearing capacities? Three things: First, a careful review of more than 6,000 different laboratory studies



# NCING: for Timken bearings

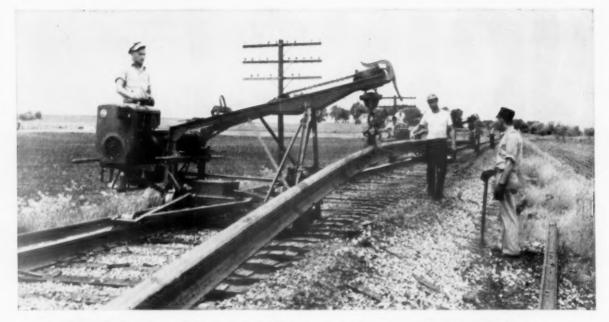
of Timken bearing performance on fatigue life machines. From these exhaustive studies, conducted on an organized, scientific basis since 1924, we keep learning more and more about predicting bearing life. Second, refinement in the method of analyzing these studies mathematically.

Third, a careful review of the life of millions of Timken bearings in the field.

#### How Much Can This Save YOU?

To find out how the new capacity ratings affect the types and sizes of Timken bearings in which you are interested, call your Timken bearing representative or write our Engineering Department. We'll be glad to work with you at the drawing board stage. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ontario. Cable address: "TIMROSCO".

TAPERED ROLLER BEARINGS ROLL THE LOAD



BYE BYE, CLICKETY-CLACK

Complete continuous rail program is concrete proof of Monon's determination to bring shippers the world's most Efficient, Dependable, Prompt Service and Reduced Costs!

Continuous rail, welded together, laid in lengths of almost a quarter of a mile, is silencing the old familiar "clickety-clack" of wheel on joint. This new silence of the rails symbolizes a modern era of streamlined efficiency in railroading.

Monon is even now putting into effect a complete continuous rail program—and Monon methods, illustrated here, have been widely studied by railroad men from all over the country. This is merely one more concrete example of the modern Monon's policy of using the latest scientific discoveries in maintenance, communications and operations to bring you, the shipper, the most dependable, efficient speed and service. Now, as never before, it pays to ship on the Monon!



Steel rails, each close to a quarter mile long, go out the right-of way.

THE HOOSIER LINE
For shipments to, through, or from Indiana...



This modern spike puller goes to work, readying the old rail for removal.



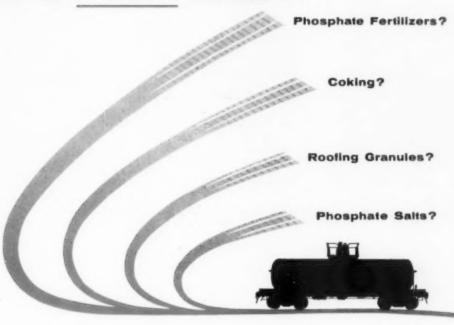
The machine that beats John Henry! Spike driver puts in new spike in seconds,



MONON RAILROAD

For More Information Circle No. 327 on Inquiry Card-Page 17

#### WHAT'S YOUR LINE?



#### **GENERAL CHEMICAL**

offers a superior quality of wet process

#### PHOSPHORIC ACID, 65%

Commercial and Fertilizer
(47% min. P<sub>2</sub>O<sub>5</sub>)

Now, America's foremost producer of mineral acids offers industry a superior commercial grade of wet process Phosphoric Acid.

Not a by-product! General Chemical Phosphoric Acid is made especially for such uses as the manufacture of phosphate salts, fertilizers (liquid, granulation, enrichment, etc.) and other applications. It is specially treated to remove the excessive amounts of sulfuric acid, fluorine and silicates found in ordinary fertilizergrade phosphoric.

It will pay you to see General Chemical now for your requirements if you are using phosphoric acid or anticipate a future need. For samples, prices and other data, phone or write your nearest General Chemical sales office.

#### Other "GC" Mineral

Sulfuric Acid
Mixed Acid
Nitric Acid
Hydrofluoric Acid
aqueous and anhydrous
Muriatic Acid
Oleum



Basic Chemicals for American Industry

#### GENERAL CHEMICAL DIVISION

ALLIED CHEMICAL & DYE CORPORATION

40 Rector Street, New York 6, N. Y.

Offices: Albany • Atlanta • Baltimore • Birmingham • Boston • Bridgeport • Buffalo • Charlotte • Chicago • Cleveland (Miss.) • Cleveland (Ohio) • Denver
Detroit • Houston • Jacksonville • Kalamazoo • Los Angeles • Milwaukse • Minneapolis • New York • Philadelphia • Pittsburgh • Providence • San Francisco
Seattle • St. Louis • Yakima (Wash.) • In Canada: The Nichels Chemical Company, Limited • Mentreel • Teronte • Vancouver



"Buffalo" Style "V" Sky-Vent



"Buffalo" Style "H" Sky-Vent

#### "BUFFALO" PACKAGE VENTILATION

... ON THE ROOF AND OUT OF THE WAY

"Buffalo" Sky-Vent Roof Ventilators provide high-volume exhaust for large plant areas not adjacent to outside walls, or where duct work is impractical. Located on the roof, they do not interfere with future plant modifications or take up floor space. Installation is relatively simple, since "Buffalo" Sky-Vents are delivered as complete packages, including fan, motor, housing, hood and curbing. Already in extensive use, these highly efficient and trouble-free units are available in the two styles shown, with "Buffalo" Propeller or Axial Flow Fans, in 12" to 120" sizes to exhaust 1,000 cfm to 250,000 cfm of hot air, fogs, and fumes. Construction is sturdy, rigid and weather-proof. Write for Bulletin FM-1234 for all details.

#### ... OR EASILY MOUNTED IN WALLS, WINDOWS OR OVERHEAD

Husky, efficient "Buffalo" Design 53 Propeller Fans are self-contained, ready-to-run units in 24" to 120" sizes to exhaust 5500 to 250,000 cfm

anywhere needed. Their rigid, diestamped square panels are designed for easy fitting in wall openings or overhead mounting on structural support. Efficiencies and low noise characteristics are unusually good, too, due to the properly shaped blades, slow rotor speeds and close clearance between blade tips and the smoothly curving inner periphery. Available in special construction for a wide range of temperature and corrosive fume applications. Full details in Bulletin FM-315, your copy on request.



"Buffalo" Design 53 Package Propeller Fan

#### BUFFALO FORGE COMPANY

143 Mortimer St.

Buffalo, N.Y.

Canadian Blower & Forge Co., Kitchener, Ont. Sales Representatives in all Principal Cities

INDUSTRIAL EXHAUSTERS BELTED VENT SETS PROPELLER FANS "E" BLOWERS-EXHAUSTERS For More Information Circle No. 325 on Inquiry Card-Page 17



(Continued from page 258)

and reduced maintenance. Also, the lubrication system has been revamped to give better protection to the bearing housing and yet allows regreasing when nec-

essarv.

Included among the new motors are open drip-proof models for standard applications and totally enclosed fan-cooled motors for use in corrosive atmospheres. In the open drip-proof model, the one-piece cast-iron frame encloses a larger area than the older motors did. This means the dripproof units can be used under many conditions which formerly required splash - proof motors. Double-end ventilation eliminates the hot spots associated with straight-through ventilation.

GE's totally enclosed fan-cooled model is designed to give protection from corrosive atmospheres. A fan drives air over the motor at high velocity and pressure and heavier rib construction provides greater cooling area.

To meet individual customer requirements, GE used the "building block" approach in making these motors. This means, for example, that screens can be fastened to the stator and shield opening after the standard motor has been completed. No extra drilling or machining of the frame is necessary. Other modifications to meet customer specifications can be made by using a standardized number of special end shields such as face, flange and pump bases.

World Steel Products Corp., New York, has announced the formation of a new company, the Spartan Steel Products Corp., 1230 Oak Point Ave., Bronx, N.Y. It will specialize in the manufacture of hollow metal doors, frames and related products for housing and commercial projects.

> For More Information Circle No. 330 on Inquiry Card-Page 17→ PURCHASING



whatever the job . . .

# PERMACEL TAPE

products Permacel Tape Corporation, New Brunswick, N. 1 . a Johnson Johnson company

#### How to have factories in every city...ship United!



Electric motors being loaded aboard DC-6A Cargoliner are checked by United's W. S. Emrich and Reuland's W. L. Johnson (right).

Reuland Electric Co. makes electric motors, many on special order. Reuland's reputation for prompt delivery is known coast to coast. "Our customers couldn't get better service if we had factories in every city," says Reuland's Western Div. Sales Manager, W. L. Johnson. "As it is, the motors are made to order here in Alhambra, California, shipped overnight by United Air Freight."

Shipping United has important competitive advantages for companies like Reuland: wider markets, lower inventory, savings in packaging and insurance. Plus guaranteed space dependability (Reserved Air Freight), door-to-door service, modern cargo handling procedures, round-the-clock flights featuring the world's fastest passenger and all-cargo planes. Ship United!

#### **Examples of United's low Air Freight rates**

|                           |   |     |   |  |  | per | 10 | 0 pounds* |
|---------------------------|---|-----|---|--|--|-----|----|-----------|
| CHICAGO to CLEVELAND      |   |     | , |  |  | 4   |    | \$4.78    |
| NEW YORK to DETROIT       |   |     |   |  |  |     |    | \$5.90    |
| DENVER to OMAHA           |   |     |   |  |  |     |    |           |
| SEATTLE to LOS ANGELES .  |   |     |   |  |  |     |    | \$9.80    |
| PHILADELPHIA to PORTLAND  | , | . , |   |  |  |     |    | \$24.15   |
| SAN FRANCISCO to BOSTON . |   |     |   |  |  |     | ,  | \$27.00   |

\*These are the rates for many commodities. They are often lower for larger shipments. Rates shown are for information only, are subject to change, and do not include the 3% federal tax on domestic shipments. Towns On the Control of the Control

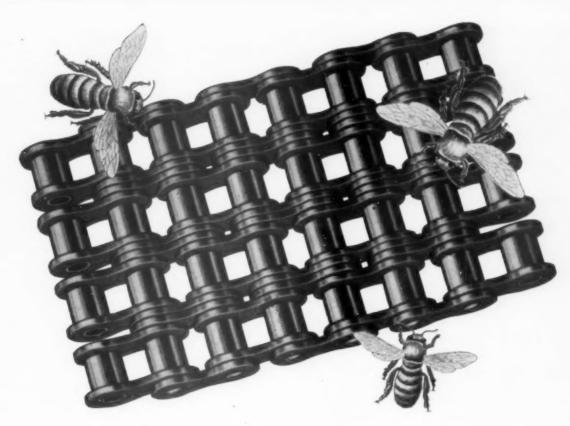
Door-to-door service

SHIP FAST...SHIP SURE...SHIP EASY

For service, information, or free Air Freight booklet, call the nearest United Air Lines Representative or write Cargo Sales Division, United Air Lines, 36 South Wabash Avenue, Chicago 3, Illinois

For More Information Circle No. 331 on Inquiry Card—Page 17

AIR LINES





#### FACTS OF LIFE...

Facts which concern the procurement man are quality, cost and reliable service.

Whitney Chain assures your production program a remarkably complete service...from initial design and development to dependable deliveries and rapid replacements. These aids to higher production and lower costs are the result of teamwork between the Whitney factory, field engineers and the nation-wide network of competent Whitney Distributors.

Now, Whitney offers two important design advancements . . . Self-Lubricating Single and Double Pitch Roller Chain and *fatigue resistant* Processed Roller Chain. Each completely proven in the field, these chains can open entirely new cost saving concepts for your drive-design programs.

Whitney Self-Lube Roller Chain outlasts regular chain as much as 5 to 1 under rugged field conditions subject to extremes of dust or moisture. They are widely used in industries on processing equipment where cleanliness is vital

and where external lubrication is not practical or desirable. Here, Whitney's exclusive sintered steel chain bushings "oil from the inside"... are prelubricated for life.

And, Whitney's new fatigue resistant Processed Roller Chain is establishing new service standards for durability, particularly on problem drives involving unusual operational conditions, stresses and heavy shock loads. This performance comes from the exclusive Whitney fatigue resistant process which offsets excessive operational stresses in the chain.

These new dynamic, balanced chain designs serve better, longer and at less over-all cost. And so does the entire Whitney line of A.S.A. Roller, Silent and Conveyor Chain Drives . . . all precision engineered for top quality.

Whitney Field Engineers provide nation-wide consultant service, backed up by company operated warehouses and alert Whitney Distributors offering a complete off-the-shelf stock service. If you want RESULTS specify WHITNEY CHAIN.

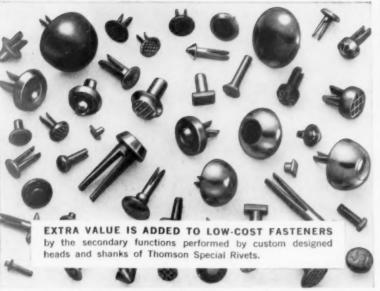
CREATORS OF SELF-LUBE CHAIN

Whitney

CHAIN COMPANY

207 Hamilton St., Hartford 2, Conn.

ROLLER CHAIN . SILENT CHAIN . CONVEYOR CHAIN . SPROCKETS . FLEXIBLE COUPLINGS



## What Does Value Analysis of Special Rivets Reveal?

By SIDNEY C. PARKER, Sales Department Judson L. Thomson Manufacturing Company

Careful study of the cost-cutting possibilities of special rivets by your value analysis group will, I believe, lead you to two profitable conclusions. You'll agree that no other fasteners offer you a comparable combination of versatility and economy.

Subsequent investigation will lead you to conclude that no other source of special rivets can match the quality-price-delivery combination offered by Judson L. Thomson Mfg. Co. A closer look at the special rivets pictured above provides a logical starting point for your value analysis project.

Look at their heads: Cold-headed by a single, high-speed operation or capped by a low-cost secondary operation, Thomson Special Rivets serve as cam followers, studs, stops, electrical contacts, decorative spots, protective buttons, coding, and trade-marking devices and other multi-purpose fasteners.

Look at their shanks! Shouldered by the cold-heading process, or by supplementary turning, Thomson Special Rivets double as pivots and fasteners. With deep-drilled or split shanks, they become self-piercing fasteners for luggage, brake linings, sporting goods, and similar assemblies. Made in male and female pairs, they become compression rivets which are widely used for handle fastening by the cutlery industry. Consideration of such applications may guide your value analysis group toward design changes or parts substitutions that will cut costs substantially.

Look to Thomson! Since 1885 thousands of fastening problems have been solved by Thomson Special Rivets and custom-tooled rivet setting machines. Our file includes more then 8000 rivet specifications, in either die or print form. The chances are that one of them will fit your requirements. If not, our design, engineering and production facilities promise early delivery of test samples and production runs. More than 250 Thomson Rivet-Setting Machine models can be quickly and easily adapted to fit any new problem. Automatic hopper feed, multiple rivetsetting heads, radial and turret feeds and special load fixtures are common accessories that increase assembly

Free "Fastener Fact File"

Our new manual on all phases of riveting belongs in the hands of everybody who buys or specifies rivets. It covers rivet types, applications, materials, finishes and other factors that determine selection of the right design and machine for cutting fastening costs. Request your copy today. Write Judson L. Thomson

Manufacturing Company, Department P, Waltham 54, Mass.





JUDSON L. THOMSON MFG. CO., WALTHAM 54, MASS.

For More Information Circle No. 329 on Inquiry Card-Page 17

Expanding production for the rocket engine program and increased welding work on other special high-alloy steel fabrications have prompted Standard Steel Corp., Los Angeles, Calif., to lease additional space at the former U. S. Spring & Bumper location across the street from the company's Los Angeles plant. The space will also be used for construction of liquid oxygen and other fuel tanks for use in guided missile development, chemical processing equipment, road construction machinery, industrial calciners, dryers and coolers for the mining industry. This rental together with the purchase of Leader Iron Works, Decatur, Ill., last November has doubled the company's plant area and facilities in the last few months.

Air Reduction Sales Company, a division of Air Reduction Co., Inc., New York, will build a multi-million dollar air liquefaction plant for the production of liquid oxygen, nitrogen and argon at Acton, Mass., near Boston. The investment in this plant, to be started late this spring, will be in excess of \$9,000,000. Scheduled for completion during the summer of 1958, it is designed to produce 75 tons of liquefied gases per day. The new facility will replace the existing distribution sub-station. It will be the fifth large air liquefaction plant to be constructed by the company.

A new mill depot has been opened in Boston, Mass., to serve the customers of Wolverine Tube, Division of Calumet & Hecla, Inc., New York. It will stock copper water tube, refrigeration tube and automotive tube. Establishment of this new service facility is expected to speed shipping to the company's customers in New England.



Ski lift operators stress safety when it comes to buying wire rope. Too many lives are at stake. So they buy . . .

# A Safe Lift

Even though you don't operate a ski lift, false economy can be costly in your rope purchases, too. For a rope failure can cause personal injury . . . wreck your equipment . . . throw off your entire work schedule . . . and affect employee morale. Yes, a "bargain" wire rope may save you money, yet cost you your peace of mind. Don't take a chance. Buy a rope that's a quality rope—buy Wickwire Rope.



PRODUCT OF WICKWIRE SPENCER STEEL DIVISION THE COLORADO FUEL AND IRON CORPORATION

LOOK FOR THE YELLOW TRIANGLE THE COLORADO FUEL AND IRON CORPORATION — Denver · Mouston · Odessa (Tex.) · Phoenix · Solt Lake City · Tufsa
PACIFIC COAST DIVISION—Los Angeles · Oakland · Partland · Son Francisca · Saattle · Spokane
WICKWIRE SPENCER STEEL DIVISION — Boston · Buffalo · Chattanooga · Chicago · Detroit · Emlenton (Fa.) · New Orleans
New York · Philodelphia

For More Information Circle No. 334 on Inquiry Card-Page 17

5050



#### PRE-CUT, PACKAGED CHAIN

#### FEATURED "FIRSTS" OF THIS NEW CAMPBELL CHAIN

- Pre-Cut to eliminate measuring and cutting
- Pre-Packed for easy handling and quick inventory control
- Clean—no dirty hands or clothing
- e"Measure-Mark"—marked every 5' and color-coded in the 50' and 100' lengths

CAMPBELL

CHAIN

- 3/16", 1/4", 5/16", 3/8" Proof Coil
   Chain . . . in lengths of 10', 15', 20',
   50' and 100' . . . in attractive easy-to-handle packages.
- Instantly identified by the rich blue color...tempered right into the chain.

The newest, surest, most convenient way to buy chain. When it's "Blue Temper" Proof Coil . . . you know it's easy to store . . . accurately cut . . . easy to handle. And you can be "Brand-Sure" when you see the Campbell Chain blue!

Get complete information from your Campbell distributor or write direct.

CAMPBELL CHAIN Company

York, Pa.—W. Burlington, Iowa
Portland, Ore.—Sacramento, Calif.—E. Cambridge, Mass.
Makers of the famous Lug-Reinforced Tire Chains

For More Information Circle No. 335 on Inquiry Card-Page 17



Newark Wire Cloth Company, Newark, N. J., which in 1952 purchased the machinery and plant of Cosgrove Wire Cloth Company, Belleville, N. J., has announced that the Cosgrove Company was dissolved. Over the intervening years, Newark Wire Cloth has disposed of the Fourdrinier looms but transferred to the Newark plant all of the regular looms thus adding about 20 percent to its weaving capacity. Space for the looms was provided by an extension to the factory of some 16,000 square feet of floor space. Finished cloth, inventory, wire and other supplies were transferred to this new extension. thus making room for the Cosgrove looms in the regular loom building. Manufacturing, storage and office space for the company now totals about 65,000 square feet, all on one floor.

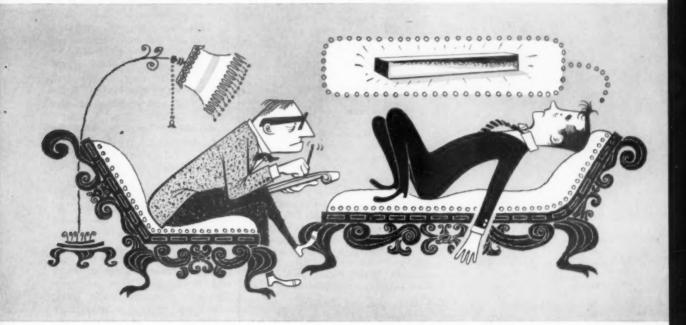
Goodrich-Gulf Chemicals, Inc., which is modernizing its synthetic rubber plant at Institute, West Va., has awarded an engineering and construction contract to The Girdler Company, Louisville, Ky. Girdler's services will be employed in converting one of the three production lines to a cold rubber process. Girdler, a division of National Cylinder Gas Company, recently completed the erection of a \$1.5 million steam power plant for Goodrich-Gulf at Institute, West Va.

A change in the official name of the Continental Diamond Fibre Division of the Budd Company, Inc., Newark, Del., has been announced. The new corporate name is Continental - Diamond Fibre Corporation. The name change does not affect relationship of the two concerns. The new corporation remains a wholly owned subsidiary of Budd Company as it has been since its acquisition in 1955.

For More Information Circle No. 336 on Inquiry Card—Page 17→ PURCHASING Why more and more psychiatrists are now recommending USS CARILLOY Steels for harrassed purchasing agents!

Life can be difficult when part or all of your daily job involves the purchasing of a variety of alloy steels. The best way to keep your complex problems from affecting your disposition is to get next to a dependable, one-stop source of alloy steels. And United States Steel is a good one to get next to.

Here's why: Quality USS Carilloy Steels come in practically every size and form you will ever need; and if your requirements are special, they too can be met with USS Carilloy Steels. What's more, USS technical assistance is always available when you need help in choosing the right steel. The high quality . . . the wide selection in bars, billets and flat-rolled products . . . and the special service you get from United States Steel save you time. In your business, that's money!



#### What is available in USS CARILLOY Steels:

There is a complete line of quality open-hearth and electric-furnace USS Carilloy Steels—ingots, blooms, billets, slabs, bars, bar shapes, spring flats, plates, sheets, strip, special sections, structural shapes, or any other form you need . . . in regular, aircraft, bearing, gun, firebox, and other qualities . . . quenched and tempered, annealed, normalized, stress-relieved, or with special heat treatment . . . hot-rolled, coiled, straightened, leveled, flattened, machined, cracker, or torch-cut, sandblasted, oiled, pickled, or just about any way you need it . . . to meet your requirements for grain size, hardenability, analysis, cleanliness, magnaflux, and other specifications.

Metallurgical Assistance is always available from United States Steel on application and fabrication of USS CARILLOY Steels. This is another reason to make United States Steel your one-stop source for all alloy steels.

Write, or call our nearest Sales Office for more information on our complete line of USS CARLLOY Steels. United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

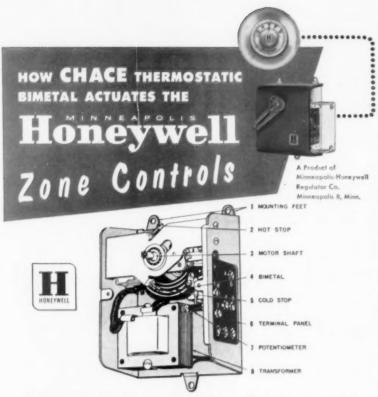
UNITED STATES STEEL CORPORATION, PITTSBURGH
COLUMBIA-GENEVA STEEL DIVISION, SAM FRANCISCO
TERNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA.
UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

#### CARILLOY STEELS

USS and CARILLOY are registered trademarks.

ELECTRIC FURNACE OR OPEN HEARTH COMPLETE PRODUCTION FACILITIES IN CHICAGO OR PITTSBURGH





The Honeywell Round (or any of the other M-H room thermostats) and the M829A Damper Control are among the controls that provide a modulating air volume zone re-balancing for forced air heating and cooling systems. Your residence now may have three or more such zone controls to compensate for changing conditions such as outdoor temperature, wind direction and velocity, solar radiation, cloudiness, etc. Constant comfort may now be yours at all times in recreation room, attic, living room, sleeping areas, or distant wings. Chace bimetal actuates these controls.

The M829A Damper Control does NOT open and close the duct dampener each time the room thermostat calls for heat. The Chace Thermostatic Bimetal element makes and breaks the contact at intervals determined by the heating requirements of the zone. In colder weather the ON time increases. Thus the percentage of time the circuit to the Damper Control is closed increases in proportion to the heating load. Current flowing for shorter or longer intervals through the bimetal coil element produces heat which causes the bimetal to expand and rotate the damper shaft. If less heat is needed in the zone, the damper "floats" slowly back and forth near the closed position. If near maximum heat is needed, the damper "floats" near the wide open position. The burner operation is controlled by a T835A Outdoor Reset Control whose two remote bulb elements maintain plenum temperatures proportional to outdoor temperatures.

Remember Chace when you design for temperature actuation or indication, or for protection of valuable equipment. Dependable Chace Thermostatic Bimetal is available in 28 types, in strip, coil or completely fabricated and assembled elements made to your specification. Write for new 44-page booklet, "Successful Applications of Chace Thermostatic Bimetal," containing interesting uses of bimetal and many pages of engineering data.



For More Information Circle No. 333 on Inquiry Card-Page 17



Construction will begin shortly on a \$250,000 western research center at Anaheim, Calif. for Robertshaw-Fulton Controls Controls Company, New York. The 15,000 sqaure foot building will be located on a five-acre site. In 1954, the company opened a \$1-million research center at Erwin, Pa., devoted to research in automatic controls for home and industry. The new facility will engage in the same fields of interest, but with emphasis on the western point of view. The present research operation near the Los Angeles Airport will be merged with the new center when construction is completed.

A greatly expanded research and development program has been launched by Associated Spring Corp., Bristol, Com. The two-fold purpose is to improve its present products, precision mechanical springs and spring steel, and to develop new products. The new research center being established, will more than double the company's research facilities and staff. It will be completely equipped with the testing and analytical devices required for fundamental research in mechanical and metallurgical engineering, and will supplement the facilities of the existing center at Plymouth, Mich., in the plant of the Barnes-Gibson-Raymond Division of the corporation.

Graybar Electric Company, Inc., New York, has purchased property and signed a building contract with the Clearing district of Chicago for a new office and warehouse building. Construction of the 150,000 sq. ft. concrete and brick faced facility, located on 2045 North Cornell Avenue, will start immediately and will be completed by March, 1958.

For More Information Circle No. 338 on Inquiry Card—Page 17→



Quality with a pedigree

Every year more and more users of gears who demand the highest quality are turning to ILLINOIS GEAR to meet the exacting needs for this very important part of their equipment or machinery.

They have come to know and depend on ILLINOIS GEAR — a company with a rich heritage in the manufacture of quality gears . . . from whose modern plants come the most complete line of gears in the world!

If you use, specify or buy gears for any purpose — look to ILLINOIS GEAR as your most complete and dependable source.







Look for this mark (1115) the symbol on finer gears



Gears for Every Turpose ... one gear or 10,000 or more

ILLINOIS GEAR & MACHINE COMPANY

2108 NORTH NATCHEZ AVENUE . CHICAGO 35, ILLINOIS



SAME DAY Shipments—Standard ® drill jig bushings from our FACTORY and conveniently located WAREHOUSING DISTRIBUTORS.

SPECIAL sixes get top priority SERVICE.

CAREFUL manufacture—from WEAR-RESISTANT, chrome alloy bearing steel.

drill jig bushings meet the most rigid standards of PRECISION and DURABILITY.

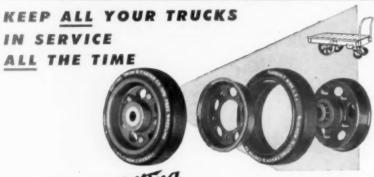
Write or phone for a catalog and price list today!

#### **ACCURATE BUSHING COMPANY**

445 NORTH AVENUE / GARWOOD, NEW JERSEY



For More Information Circle No. 339 on Inquiry Card-Page 17



### with Nutting Demountable RUBBER TIRED WHEELS

You don't have to buy expensive complete new wheels when tires are worn! Bolted assembly permits tire replacement in minutes—No special tools!

Next time you need new wheels, casters or trucks, change to Nutting Demountables. No stretch or creep under severest service—and only Nutting, pioneers in the field, has sizes and capacities for every type of truck or trailer.

For details and a representative listing of the most complete

Junior Catalog 56-G

floor truck line in America write for Bulletin 'D' and Junior Catalog 56-G.



NUTTING TRUCK AND CASTER CO.
1272 DIVISION STREET . FARIBAULT, MINNESOTA

Export Sales: Scheel International, Inc., 5909 North Lincoln Ave., Chicage 45, Ill.

For More Information Circle No. 340 on Inquiry Card—Page 17



Lamson Corp., Syracuse, N. Y. has announced the appointment of Gifford Kittredge as manager of Commercial Division. Mr. Kitt-



Gifford Kittredge

redge will be responsible for all sales and related activities of airtubes and commercial conveyor systems. His duties will also include the development of marketing policies, and the coordination of engineering, field installations and field sales operations. He joined the corporation in 1946 as an engineer. Two years later he was transferred to the Chicago office as a field engineer. In 1953, he was promoted to New York regional manager where he supervised the New York, Philadelphia and Baltimore districts.

The Cadillac Plastic & Chemical Company, 15111 Second Avenue, Detroit, Mich., has been appointed a distributor of Fiberglas reinforcing materials for plastic products manufactured by Owens-Corning Fiberglas, Toledo, Ohio. Supplementing its Fiberglas representation, the company will also distribute all other components of reinforced plastics, including polyester and epoxy resins, catalysts, parting agents and solvents. It will maintain a Fiberglas reinforced plastics advisory service for customers.

For More Information Circle No. 341 on Inquiry Card—Page 17-> PURCHASING

# PLENTY OF WEAR AND TEAR HERE! Matched Thermoid Multi-V belts installed an 20 h.p. meter drivan tanning drums in the Geilich Tanning Company, Taunton, Mass.

These 6 x 8 ft. tanning drums posed a tough drive problem. Wooden sheaves, small angle of driver contact and constant exposure to tanning agents resulted in severe service conditions. Wear and tear on V-belts was terrific...replacement frequent...until matched sets of Thermoid Multi-V belts were installed.

Now the average belt life is 6 years! Plant personnel report smooth, positive drum action. From every standpoint, service has been more than satisfactory, replacement costs lower and down time less.

For the extra tough drive problems in your plant, use Thermoid. Every Thermoid Multi-V Belt is pre-stretched to provide longer service and maximum power transmission without slippage. Thermoid C, D and E sections are rayon-grommeted for greater strength and extra flexibility to with-

stand repeated shock loads. The entire belt is vulcanized into a solid unit that resists moisture, abrasion, internal friction and heat.

To meet the most exacting requirements of any plant service, your Thermoid Distributor carries a complete line of Thermoid Multi-V belts, hose and conveyor belting.

Conveyor Belt . . . There's a Thermoid



for every industrial need.
. . . and Thermoid Hose

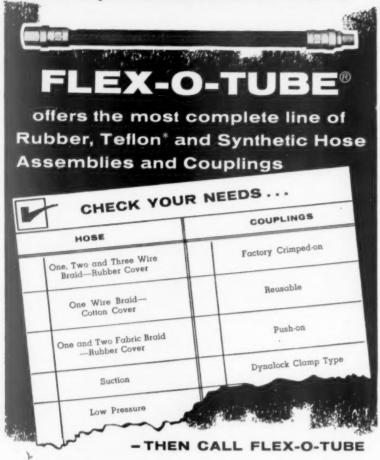




THERMOID COMPANY, Trenton, N.J.

#### What are your

## HYDRAULIC HOSE REQUIREMENTS?



At Flex-O-Tube you'll find the finest and most complete selection of hydraulic system components . . . all manufactured of top quality materials. The inner tube of Flex-O-Tube hose is composed of a seamless synthetic compound resistant to petroleum products, common hydraulic fluids, water and air. A wide variety of reinforcement and outer covering combinations are available.

Flex-O-Tube offers four kinds of fittings and couplings. (See chart above.) These are available in all standard connecting types.

Remember, for all your hydraulic hose and coupling requirements—write or phone Flex-O-Tube First!

When your requirements call for metal, specify Flexon Flexible Metal Hose, available in a complete range of sizes and types.

\*Du Pont Trademark

FLEXON®

OUALITY

proved in service and backed by over 59 years manufacturing experience

Flexonics orporation

1316 S. THIRD AVENUE, MAYWOOD, ILLINOIS

FORMERLY CHICAGO METAL HOSE CORPORATION

Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components. In Canada: Flexenics Corporation of Canada, Ltd., Brampton, Ontario

For More Information Circle No. 342 on Inquiry Card-Page 17



The election of Julius Kendall as vice president in charge of sales has been announced by Arkwin Industries, Inc., West-



Julius Kendall

bury, N. Y. The company is an engineering-manufacturing firm specializing in the design, development and manufacture of aircraft control equipment for hydraulic and pneumatic systems, Formerly, Mr. Kendall served with Greer Hydraulics Inc. at N. Y. International Airport for 11 years as general sales and service manager; vice president, sales; and vice president in charge of research and development.

George C. Jennings has been appointed New York district sales manager of the Wickwire Spencer Steel Division of the Colorado Fuel and Iron Corp., New York. Prior to his new appointment, Mr. Jennings was assistant district sales manager of the company's Buffalo district. He has been with the corporation since 1946, serving in various capacities in the Buffalo territory. Mr. Jennings will maintain offices in New York. He succeeds C. K. Pattison, who will handle special assignments and will operate from the firm's offices at Clifton, New Jer-



#### Only New HALLOWELL ERECTOMATIC. Steel Shelving



LESS TIME, MORE UNITS PER HOUR, lower costs with Hallowell Erectomatic steel shelving. Maximum adaptability to meet changing conditions, too.

No matter what type of shelving you need—open, closed, bin units, ledge units, counter or cabinets—there's new Hallowell Erectomatic\* steel shelving to make your job easy. The unique built-in locking device\* speeds assembly and rearrangement of shelving. To position a shelf—just slide it into place on the shelf supports, press the locks, and the shelf is locked. To reposition a shelf—release the locks, pull the shelf straight out, slide it straight in on its supports at the new location, and press the locks. It takes only seconds to do the complete job.

For complete information, see your Hallowell distributor. Or write Hallowell Shop Equipment Division, STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.

\*Patent applied for

TWO MEN ASSEMBLED new Hallowell ERECTOMATIC steel shelving in just over 10 minutes. Closed unit was 36 in. wide, 18 in. deep, 7 ft. 3 in. high, complete with seven shelves. Standard models of other design required from 13-55 min. Table shows test results.

| Brond Time to Assemble (Min.)  Erectomatic 10.24 |       | Units Per Hour |  |  |  |  |
|--|-------|----------------|--|--|--|--|
|  |       | 5.75           |  |  |  |  |
| A  | 13.23 | 4.53           |  |  |  |  |
| В  | 14.24 | 4.21           |  |  |  |  |
| C  | 16.30 | 3.68           |  |  |  |  |
| D  | 18.12 | 3.31           |  |  |  |  |
| E  | 25.03 | 2.40           |  |  |  |  |
| F  | 55.03 | 1.09           |  |  |  |  |







FAST ASSEMBLY. Just position the shelf supports, insert the shelf, and press the unique locking device. No tools or special instructions necessary.

#### gives you all these extra-value features



QUICK SHELF CHANGE. Just release the locks, remove the shelf and its supports, relocate the shelf, and press the locks. It takes only seconds.



STRAIGHT-IN, STRAIGHT-OUT SHELF CHANGE. No tilting to interfere with any other shelf. No time wasted unloading shelves or removing bin fronts, partial dividers, label holders.



INDEPENDENT SHELF POSITIONING. Each shelf is an independent unit. Can be removed and repositioned without disturbing any other part. All shelves in a rack can be aligned.



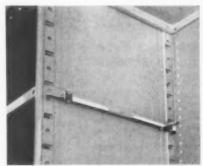
FULL USE OF SHELF AREA. No angles or tees, and beaded corner posts prevent waste of valuable storage space. No box guides are needed.



COMMON SIDE PANELS AND POSTS save assembly time. Also save material between adjacent units in a rack. And both back and side panels are one-piece.



BEADED POSTS AND FLANGED SHELVES prevent snagging of clothing or stored goods. Also prevent injuries from sharp, ragged edges.



FULL DEPTH SHELF SUPPORT. Load is distributed over full depth of shelf. No buckling is possible. Reinforcements can be added when they are required.



4 CLASSES OF SHELVES. Regular, medium, heavy, and extra-heavy shelf construction meets all load requirements. Made to government specifications. Extra-heavy shelf shown.

STANDARD PRESSED STEEL CO.

HALLOWELL SHOP EQUIPMENT DIVISION





These are the basic elements necessary to design and produce a precision built spring. To supply the above elements takes skill, experience and imagination... ingredients that Accurate Spring provides every one of their customers every day.

Accurate makes millions of springs a month—precision springs held to close tolerances by rigid quality control and inspection. Production schedules for large quantities are planned well in advance. Customers are assured of deliveries scheduled to their needs.

Proper packaging is necessary too, for ease of handling and speeded production. Untangling springs can be irksome and expensive.

These facilities are here to serve you. Just write, outlining your requirements and specifications.



ACCURATE SPRING MFG. CO., 3825 W. Lake St., Chicago 24, III.



#### New Box Design Permits 50% More Storage

Raybestos Division of Raybestos-Manhattan, Inc. is realizing an important advantage from a new attractively designed box. It gives them the ability to stock 90,000 sets of bonded lined brake shoes in the same amount of space capable of holding only 60,000 sets in old style boxes. A packaging cost reduction of thirty-five per cent has also been realized from this change in design. The new box permits automation for sealing and stamping, plus minimum handling, easy storage and solid stacking.



#### Welding Maintenance Time Slashed 125 Hours Per Month

By mounting a full complement of welding equipment on a Kalamazoo Model 2500 gas-powered Speed Truck, Goodyear Tire & Rubber Co. is saving at least 125 hours per month on maintenance welding jobs at its Akron, Ohio, plant. The truck's 10 m.p.h. speed get the welder and equipment to the job faster, and because the welding machine is warming up on the way, the welder can begin work immediately.

# What one form of power is cheaper today than in 1940?



Electricity. And if you operate electric industrial trucks, the cost is probably less now than when you bought them.

Isn't this a refreshing contrast to the rest of today's businesscost picture? And isn't this something to think about for the future? Other costs keep going up, up, up. But electricity has been coming down, down, down—for years.

The result is that electric industrial trucks are a better power bargain today than they've ever been. And power savings plus overhead savings actually total hundreds of dollars per truck every year. This has been proved in thousands of cases in all types of truck service.

Here's how you save: You buy the power from your local electric company at low rates. Heavy duty storage batteries last for years without replacement. Cool-running electric motor-drive systems that seldom need maintenance—use no power at all when standing still. While first cost is higher, electric industrial trucks give you more than twice the useful life, according to national average figures. And it's a fact that of all the electric industrial trucks ever made in the U.S., about 90% are still on the job! That's real proof of service.

These are important cost considerations for up-to-date management men today. In addition, electric industrial trucks are easier to operate and make practically no noise—advantages especially appreciated by plant personnel. Have a talk with your nearby industrial truck dealer or salesman. He's listed in your classified telephone directory under "Trucks—industrial."

This message is presented as a service to industry by Exide Industrial Division, The Electric Storage Battery Company, Phila. 2, Pa.

THE ELECTRIC STORAGE BATTERY COMPANY Exide

### MEMO TO MANAGEMENT



#### Whatever your cleaning and processing needs!

A pioneer in the metal cleaning and processing field since 1920, Detrex is now the established leader—offering the finest and most complete combination of chemicals, equipment and service in the industry.

#### DETREX

CHEMICAL INDUSTRIES, INC.

BOX 501-A, DETROIT 32, MICHIGAN

For More Information Circle No. 347 on Inquiry Card-Page 17



#### Pics Show How It Looked Before It Was Shipped

Buyers of aluminum products are being given a new service: photos are taken of the products to show how they looked just before they were shipped by rail. The company that's come up with this idea is Kaiser Aluminum & Chemical Corp. It's using the technique on shipments from its Newark, Ohio, rod, bar, wire and electrical conductor works.

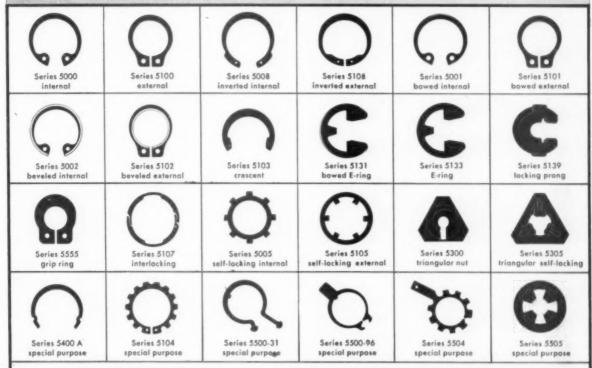
Using a Polaroid camera, Kaiser takes photographs of each carload just before it leaves the mill. Two of the photographs—a picture of each interior end of the car—are sent to the district sales office in the customer's area, a pair of the photographs are placed with the packing list which is tacked to the inside wall of the railroad car itself, and two photographs are kept on file at the Newark works.

The photographs not only graphically show the customer the condition of the shipment when it left Newark plant, but have also been used by customers as a receiving report.



Photographs of products just before shipment are sent by Kaiser Aluminum to district sales offices in the customer's area. Other copies of the photos are sent with the shipment and a third set is kept on file at the Kaiser plant.

# 6 Reasons why Waldes Truarc is your one dependable source for retaining rings



WHATEVER YOU MAKE, THERE'S A WALDES TRUARC RING DESIGNED TO SAVE YOU MATERIAL, MACHINING AND LABOR COSTS

COMPLETE SELECTION—All your retaining ring requirements can be obtained from this one dependable source. Waldes Truarc rings are available in 36 functionally different types... as many as 97 standard sizes within a ring type...5 metel specifications and 14 different finishes.

MANUFACTURING EXPERIENCE—Waldes Truarc pioneered precision retaining rings. Truarc Rings have been standardized by leading U. S. industries and Government agencies. Waldes Kohinoor, Inc. has over 50-years experience in inventing, developing, and manufacturing precision fasteners.

QUALITY CONTROL—Every step in the manufacture of Waldes Truarc rings—from engineering and raw materials through to the finished product—is carefully controlled and tested in our own modern plant. Truarc standards are the highest in the industry—your guarantee of consistent, uniform quality.

**DESIGN SERVICE**—For help in designing new products or in refining present designs, send your blueprints to Waldes Truarc engineers. Whether your product requires standard or custom-designed rings, these experts are ready to help you. They will also design special assembly jigs and fixtures—or even help you set up an automation assembly operation.

FIELD ENGINEERING SERVICE—More than 30 engineeringminded factory representatives and 700 field men are available to you on call! This engineering service can prove invaluable in helping you to solve design, assembly and production problems.

**DISTRIBUTION**—Truarc rings are available from leading OEM Distributors in 90 stocking points throughout the United States and Canada.



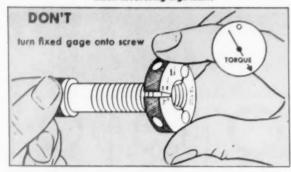
WALDES

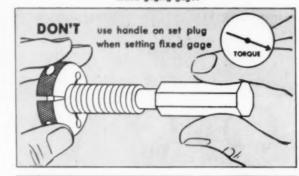
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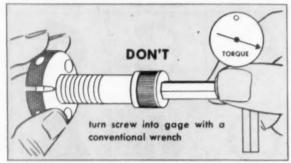
RETAINING RINGS

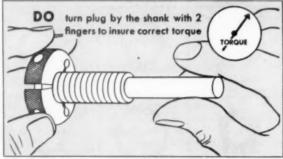
WALDES KOHINOOR, INC.
LONG ISLAND CITY 1, NEW YORK

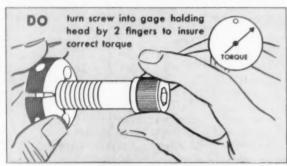
WALDES TRUARC Retaining Rings, Grooving Tools, Pliers, Applicators and Dispensers are protected by one or more of the following U. S. Patents: 2,382,948; 2,411,426; 2,411,761; 2,416,852; 2,429,321; 2,428,341; 2,439,785; 2,441,846; 2,455,165; 2,483,379; 2,483,380; 2,483,381; 2,487,802; 2,487,802; 2,491,306; 2,599,801; 2,544,631; 2,546,616; 2,547,263, 2,558,042,574,034; 2,577,319; 2,595,787, and other U. S. Patents pending. Equal patent protection established in foreign countries

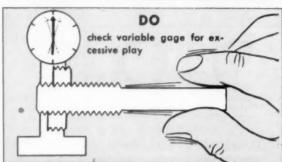












These illustrations from new SPS booklet show some of the do's and don'ts of gaging precision threads,

#### 3A threads: what they are; how to gage them — new SPS booklet tells all

Threads made to Class 3A fit are the most precise in general use in industry. But you do not always get the 3A precision you specify. Because of many different gaging techniques that yield varying results, screws with threads well outside the Class 3A tolerance limits often pass inspection.

SPS has prepared a new booklet on this subject. It explains clearly what Class 3A threads are and the pros and cons involved in the widely varying gaging techniques in use today. It reviews the gaging of high and low limits of 3A threads, sampling techniques, and even the methods of gaging gages.

All standard Unbrako socket screw products fall within specified tolerance limits no matter what method is used to gage them. Leading industrial distributors carry complete stocks. Unbrako Socket Screw Division, STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.



Form 2239, "Class 3A Threads: what they are; how to gage them." 16 pages, with many illustrations. Write for free copy today.

STANDARD PRESSED STEEL CO.



UNRRAKD SOCKET SCREW DIVISION





DOUBLE SEAL— Teffon contact seal shown. Available with snap ring and with single or double seal.



DOUBLE SHIELD— Same sizes available with single shield.



SINGLE ROW RADIAL— Also available with snap ring.

## when you want Awality



COMBINATION FELT SEAL AND SHIELD— Either standard or wide outer ring.



DOUBLE ROW-Available with single shield.



CARTRIDGE --Available with snap ring.

## you want hoover

When you want quality bearings to add to the performance, long life and smooth operation of your products, you want Hoover Ball Bearings.

Hoover Ball Bearings combine the exactness of Micro-Velvet Lapped Balls with the smoothness of Hoover Honed Raceways. The result . . . top quality bearings that assure unexcelled performance

-quietness-long life-and heavy load capacity.

Investigate Hoover's line of ball bearings in the light, medium and heavy series. Their microscopic precision adds up to your best buy in ball bearings. Manufacturers are invited to call in Hoover engineers for technical assistance. Write for information.

Micro-Velvel and Hoover Honed are Hoover Trademarks.

#### HOOVER BALL AND BEARING COMPANY, ANN ARBOR, MICHIGAN

Send information about

☐ Single Row Radial Bearings
☐ Bearings with Shields

Bearings with Seals

Combination Shield and Seal

☐ Cartridge Bearings
☐ Double Row Bearings

Inguirest.

Hoover Ball and Bearing Company, Ann Arbor, Mich.

Please send information checked. Mall copy of "Hoover Handl-Back of Anti-Friction bearings."

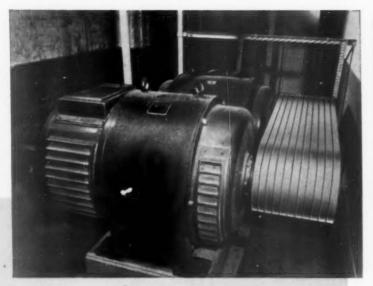
lame

Titie\_\_\_\_

Company

Address.

\_\_\_\_St





By this simple test you can see for yourself how the concave sides (Fig. 1) of the Gates V-Belt lengthen the life of the belt... thus reducing costs.

Just bend a Gates V-Belt and feel the sides. You will see that these precisely engineered concave sides have now become straight, permitting them to grip the sheave groove evenly. (Fig. 1-A). This assures longer belt life; lower costs.



Now make the same test with a straight-sided belt. (Fig. 2) Notice how the sides bulge out on the bend (Fig. 2-A) concentrating the wear at the points shown at arrows.

These tests should convince you that it pays to specify the V-Belt with Concave sides—Gates Vulco Rope...readily available from nearby distributors.

**Gates Distributors** 

ellow Pages







THE CONCAVE SIDE

World's Largest Maker of V-Belts

#### The Gates Rubber Co. Denver, Colorado

There are Gates Engineering Offices and Distributor Stocks in all industrial centers of the U.S. and Canada, and in 70 other countries throughout the world.

## Gates VRLCO Drives

for More Information Circle No. 351 on Inquiry Card—Page 17



#### Cabinet Manufacturer Improves Finish

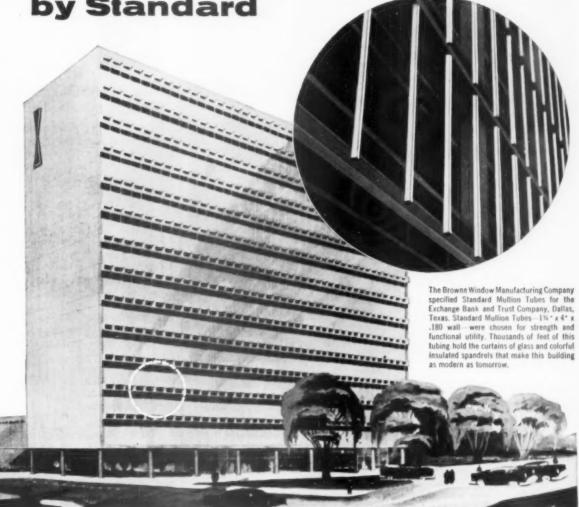


Caruso Cabinet Manufacturing Company, was up to two coats of sealer and six coats of lacquer in an effort to find a satisfactory finish for its birch kitchens. When hot spray was tried—finish was improved and production jumped—since one coat of sealer and two coats of lacquer produced a first class job. Three coats of hot spray did a better job than six coats of cold spray with these savings resulting: 33% in materials, 75% in solvents and 14 man-hour per kitchen.

#### Caster-Equipped Trucks Help Save Money

A saving of approximately \$3000 per year in maintenance costs alone has been achieved at Yellow Transit Freight Lines, Kansas City, Mo. Installation of four-wheeler terminal trucks equipped with Faultless casters is credited as the major factor in keeping freight handling costs in line. Since this type of handling equipment was put in, expensive maintenance of mechanical equipment has been eliminated, customer claims are down drastically, morning loading time is half what it used to be.

## Modern Window Mullion Tubes by Standard



#### Specified for Dallas Exchange Park Building . . . City of Tomorrow

Standard Tube is pleased to be a part of the Dallas Exchange Park—a veritable "city within a city" consisting of 4 multistoried buildings, a thousand room hotel, a medical research center, 150 retail shops, a 4 story building to house a major department store. We are specialists in square, rectangular and special tubing for a multitude of applications ranging from modern lightweight tubular furniture

to rugged structural members for agricultural machinery, as well as for architectural applications.

We produce square tubing ranging in size from ¼" OD to 4" OD up to ¼" wall thickness and rectangular and special shapes of equivalent sizes. For full information on Standard products, plant facilities and engineering assistance, write for free 8 page folder.

Many complicated square, rectangular and special-shaped tubes are possible. Submit your ideas to Standard for our suggestions.



## STAN DARD

THE STANDARD TUBE COMPANY
24400 PLYMOUTH ROAD . DETROIT 39, MICHIGAN

Welded stainless tubing and pipe • Welded carbon steel mechanical • Boiler and heat exchanger • Exclusive rigidized patterns • Special shapes • Steel Tubing—Sises \% OD to 5\% OD .028 to .260 wall • Stainless Pipe—Schedule 40: \% to 2" 1.P.S.; Schedules 5 and 10: \% to 4" 1.P.S.—Stainless Tube—\\(\frac{1}{2}\) to 4\% to 4\% \(\frac{1}{2}\) D -.025 to .165 wall

For More Information Circle No. 352 on Inquiry Card-Page 17



#### Numerical Control

#### A NEW APPROACH TO PRECISION IN PRODUCTION MANUFACTURING - "Numerical Control" is an automatic,

ultra-precision means of translating blueprint data into machine positions and, other functions. Successfully applied to Pratt & Whitney high precision Jig Borers, Hole Grinders and Rotary Tables which are usually restricted to toolroom use, Numerical Control makes the superior accuracy of this equipment available for efficient long run or short run production work where extreme precision is essential. It provides automatic operation without complex, expensive tooling or investment in special "one-

job" machines. Scrap losses due to human error are practically eliminated since the machine can be placed under the control of a tape program.

Write for more information. Pratt & Whitney Company, Incorporated, 19 Charter Oak Blvd., West Hartford, Conn.













JIG BORERS . ROTARY TABLES . KELLER MACHINES . TOOLROOM VERTICAL SHAPERS . CUTTER AND RADIUS GRINDERS



#### RATT & WHITNEY

FIRST CHOICE FOR ACCURACY

MACHINE TOOLS . GAGES . CUTTING TOOLS For More Information Circle No. 353 on Inquiry Card-Page 17



#### Stress Purchasing Savings Through Standardization

Ways in which standardization can be used to cut purchasing and production costs will be featured at the sixth annual meeting of the Standards Engineers Society. The conference will be held at the Hotel Commodore, New York, September 23-25.

Use of standards for materials, electrical and mechanical components and electronic circuitry will be stressed at various sessions. Sources of information on standards will be considered and the problems of how to organize a company to make the best use of standards will be discussed. Also on the agenda will be the relatively new problem of "reliability".

A sightseeing and special entertainment program is being arranged for families who accompany the members.

#### **New Standardization Book Available**

Standards-Guides for Tomorrow is a new book published by the Standards Engineers Society. It consists of 24 papers presented at the 1956 annual meeting of the Society held in Washington, D. C., last October.

Among the topics covered are: standardization of building materials, decimal dimensioning, standardization in the nuclear field, standards for the median size company, metals standards, screw thread standardization, American-British-Canadian screw thread unification, standardization of drafting practices, management standards, and antifriction bearing standardization.

The book is available from the Standards Engineers Society, P.O. Box 281, Camden 1, N.J. Cost of the 133-page publication is \$3.75 for nonmembers; \$3.00

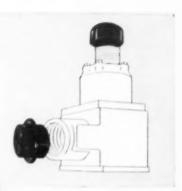
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S. S. White caps and plugs are plain or threaded, in a full range of prices and sizes to fit your requirements. They are not slippery to the grip . . . WILL NOT SHRED . . . can't be misapplied . . . give best protection to openings, studs or threaded parts. No damaged threads, dirt, moisture or leakage!

Our elastoplastic vinyl line is very reasonably priced, but gives excellent protection. And at only slightly higher cost, our acetate plugs and caps give positive, quality protection during shipping and handling. For samples and further information, just write us.







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289



## Because Precision Depends on the Measuring System . . .

## SPECIFY PRATT & WHITNEY JIG BORER END MEASURES AND INSIDE MICROMETERS

Jig borers using the "End Measure" system of locating can only be as accurate as the measuring instruments they use. So, to protect your investment in jig boring precision, insist on the best in measurement . . . Pratt & Whitney End Measures and Inside Micrometers. Made from selected gage steels, hardened, seasoned and finished in our standard temperature room, they are your assurance of dependable precision that can help you eliminate scrap losses, increase productive efficiency and up-grade product quality and acceptability.

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Pratt & Whitney Company, Inc.

19 Charter Oak Boulevard, West Hartford, Conn.











THREAD ROLLING DIES . DUOCONE DIES . TAPS . THREAD MILLING CUTTERS . REAMERS . .



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FIRST CHOICE FOR ACCURACY
MACHINE TOOLS . GAGES . CUTTING TOOLS



#### Punched-Tape Control of Machines May Solve Cost Problems

Another advance has been made in punched-tape control of machine tools. Martin Co. is now employing tape control to guide a 50-ton machine tool used in aircraft and missile manufacture at its Baltimore division.

Built to Martin's specifications by Bendix Aviation Corp.'s research lab, the system consists of a three-axis milling machine with electronic equipment that processes blueprint information to turn out precision-built structural parts. Tape control eliminates the need for costly, hand-made patterns or master parts which normally require hundreds of man-hours to produce.

Use of punched tape as a controlling device is of interest to purchasing agents because of the economies it makes possible. Tape-controlled machines may prove the answer to the cost problems of small and mediumsize industries faced with short and medium job-lot manufacturing orders. The tape technique makes possible economical changeover and low tooling investment. Instead of intricate and expensive tooling, the changeover from one job to the next can be handled almost as simply as replacing one reel of tape with another. For example, it's estimated that by using tape the auto industry could produce body dies in about one-fourth the time currently required.

In the Martin application an engineer first puts down on a process sheet the required dimensions as determined from the blueprint. These figures are then typed on a standard Flexewriter which simultaneously produces a preliminary tape on which the essential blueprint data is punched in code. With the aid of a

For More Information Circle No. 355 ←on Inquiry Card—Page 17 computer, the tape is used to produce the actual punched control tape that is fed to the control unit to actuate the machine tool.

Martin's application is said to be the first in which tape has been used to control a large profile milling machine capable of turning out large structural parts for aircraft.

#### Society for Inventory and **Production Control Men**

Steps are being taken to establish a national society of inventory control and production control executives. A sizable group of production and inventory control men met in Cleveland recently to pool their thinking as to the type of organization they wanted.

A name was adopted-the American Production and Inventory Control Society (APICS), principle objectives were outlined, and pro tem officers were elected. The new group plans to establish a network of local chapters throughout the U.S. and Canada. Temporary chairman of the APICS is Nyles Reinfeld, National Institute of Management, Inc., Cleveland.

#### Set New Standards for Natural Rubber

A better grade of natural rubber imports is hoped for as a result of new standards established by the Rubber Manufacturers Assn. (RMA). The standards have the backing of 24 producing, packing and consuming organizations in 13 countries.

A booklet, outlines the standards, "Type Descriptions and Packing Specifications for Natural Rubber Grades Used in International Trade," is being distributed throughout the world by RMA. Included in the new standards are the 30 RMA grades and six new grades referred to as Singapore types.

#### FOR MORE INFORMATION ON PRODUCTS IN THIS ISSUE USE INQUIRY CARD PAGE 17

For More Information Circle No. 356

on Inquiry Card-Page 17-



#### Because Precision Locating is Only Half the Job . . .

#### CHOOSE PRATT & WHITNEY JIG BORING TOOLS, REAMERS AND STUB GAGES

While accurate positioning is an essential part of precision jig boring, it's only half the job. Equally important is the ability to transfer the inherent accuracy of the machine to the workpiece . . . and to a great degree, this depends on the cutting tools you choose. Help your jig borer deliver its high-precision potential . . . choose Pratt & Whitney Boring Tools, End Mill Reamers and Stub Gages. De signed and produced by people who know jig borers and jig boring, they have *everything* it takes to put precision to work for you more efficiently and economically.

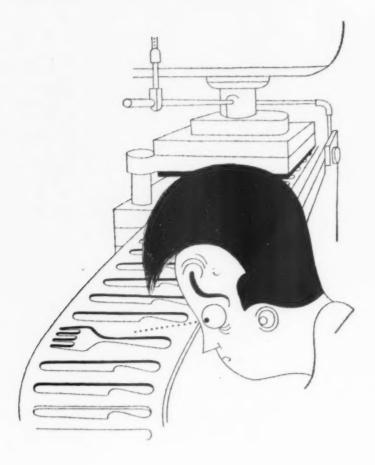
Send now for your copy of Circular 611. Pratt & Whitney Company, Inc. 19 Charter Oak Boulevard, West Hartford, Conn.





CHINE TOOLS . GAGES . CUTTING TOOLS

JULY, 1957



#### Got a metal stamping problem?

SOLVE IT WITH CRUCIBLE AIRKOOL-S TOOL AND DIE STEEL, IT'S TOUGH — ABRASION RESISTANT — QUICKLY AVAILABLE FROM LOCAL CRUCIBLE WAREHOUSE STOCKS

Airkool-S air hardening tool steel is tough and wear resistant. It's non-deforming, and machines 20 to 30% easier than the conventional A-2 type. Crucible Airkool-S is an ideal choice for blanking and coining dies—punches and shear blades.

And it's only one of dozens of popular tool steel grades regularly stocked at all local Crucible warehouses.

Crucible offers you more than steel, too. At your service is an industry-experienced staff of specialists to help you select or fabricate special steels. And Crucible is the only specialty steel producer fully integrated to the point of use. That means control and responsibility from raw material to warehouse delivery to you.

STOCKS MAINTAINED OF:

Rex High Speed Steel . . . ALL grades of Tool Steel (including Die Casting Die and Plastic Mold Steel, Drill Rod, Tool Bits, and Hollow Tool Steel Bars) . . . Stainless Steel (Sheets, Bars, Wire, Billets, Electrodes) . . . Max-el, Hy-Tuf, AISI Alloy . . . . Onyx Spring, Hollow Drill Steel and other special purpose steels.

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#### Crucible Steel Company of America

General Sales Offices, The Oliver Building, Mellon Square, Pittsburgh 22, Pa. Branch Offices and Warehouses: Atlanta • Baltimore Boston • Buffalo • Charlotte • Chicago • Cincinnati • Cleveland • Dallas • Dayton • Dervore • Detroit • Grand Rapids • Harrison • Houston • Indianapolis • Los Angeles • Milwaukee • New Haven • New York • Philadelphia • Pittsburgh • Portland, Ore. Providence • Rockford • San Francisco • Soattle • Springfield, Mass. • St. Louis • St. Paul • Syracuse • Toronto, Ont.

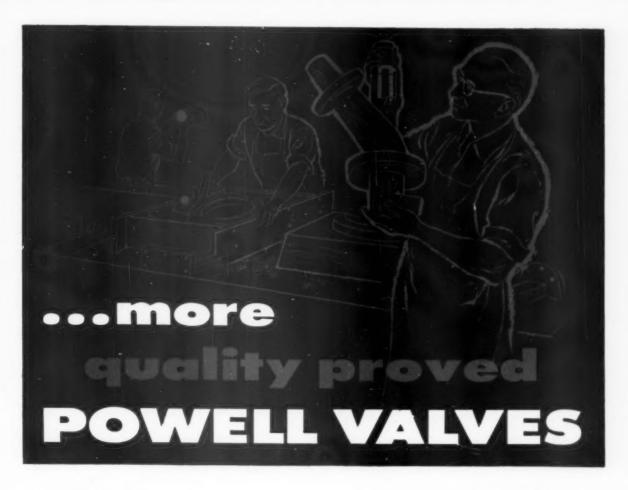




Fig. 3003—Steel Gate Valve for 300 Pounds. Outside Screw Rising Stem and Yoke.

> Fig. 150—Bronze Globe Valve for 150 Pounds W.S.P. Union Bonnet. Composition Disc.



Fig. 1793—Iron Body Bronze Mounted Gate Valve for 125 Pounds W.S.P. Outside Screw Rising Stem and Yoke.

Fig. 2337—Stainless Steel Gate Valve for 200 Pounds W.P. Screwed-in Bonnet, Inside Screw Non-rising Stem.





## for quality-crafted flow control

Ask your Powell Valve Distributor for the facts about quality-proved bronze, iron, steel and corrosion-resistant valves. Whatever your flow control problem, there's a Powell Valve to solve it.

THE WM. POWELL COMPANY, CINCINNATI 22, OHIO . . . 111th YEAR



Forged Steel. Shot Blasted. All Phoenix flanges meet full A.S.A. specifications carbon steel and alloy.

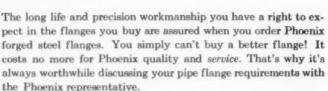


Spot faced bolting surfaces, extra fine facings, accurate threading and a protective coating are typical of Phoenix quality.





Special facings, bores, drilling, threading and special machining available.





 A serrated gasket surface finish is standard on all Phoenix flanges with raised facings.



Write for handy 36 page pocket-size reference booklet containing useful data on flanges. It's FREE!

#### Leading Manufacturers of Pipe and Tank Flanges and Commercial Forgings



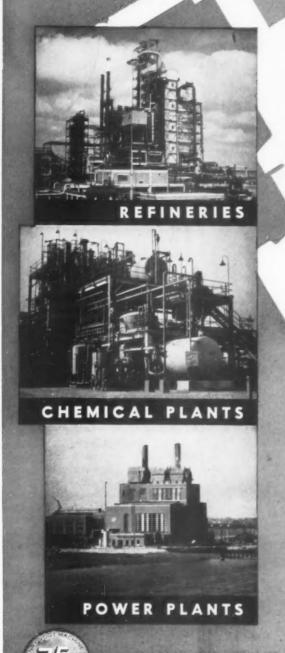
#### FLANGE AND FORGING DIVISION

#### PHOENIX MANUFACTURING COMPANY

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Integrated Manufacturing Facilities: FLANGE AND FORGING DIVISION, STEEL MILL DIVISION, HORSESHOE PRODUCTS DIVISION, RUBBER PRODUCTS DIVISION, OIL AND GREASE SEAL DIVISION

## valves, fittings and flanges by Vogt



# and TRUSTED by the NATIONS KEY INDUSTRIES

There are good reasons behind the trust which America's key industries have placed in Vogt valves, fittings, and flanges for half a century. They know that drop forged materials are uniform in structure, fine grained, and free from porosity. They know, two, and appreciate the meticulous care given these products through every stage of forging and machining in Vogt's modern shops, and about the many rigid tests and inspections. And that is why these products enjoy such an impressive record of performance in withstanding the shocks and stresses imposed by high or low pressures and temperatures and in resistance to erosive and corrosive conditions.

Service is another important factor in this confidence because Vogt maintains the world's largest and most complete stock of drop forged steel valves, fittings, and flanges always ready for immediate shipment.

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#### **Cranes Lower Costs**

Berry Bros. Machinery Co., Dallas Tex., is using two underhung crane assemblies and electric hoists in its new building where it rebuilds heavy construction machinery. The equipment was supplied by Shaw-Box Crane & Hoist Div., Muskegon, Mich. Before the new building was erected, Berry had been relying on a single monorail system supporting old style chain blocks for handling heavy machinery parts. This limited floor coverage and made for slow job cycling With the new equipment costs have been cut considerably by reducing man-hours per job.

#### Revolving Paper Roll Grab

Wyerhaeuser Timber Co.'s Pulp Div. in Longview, Wash., is using a Cascade revolving paper roll grab to cut paper handling costs. The company reports greatly improved operating efficiency, virtual elimination of dropped stock and reprocessing. The roll grab is equipped with a powered swinging arm which provided automatic adjustment for a wide range of roll diameters. Drivers no longer have to dismount to position the arm for different roll sizes.

#### Save 80% on Fork Truck Maintenance

Changeover to Lewis electric fork trucks has cut maintenance charges per truck from \$525 to \$135 for Washington Canners Cooperative Assn. Because the new trucks require less downtime, the firm reports it has achieved a smoother production flow. The trucks are in use an average of 16 to 22 hours per day, aiding the various canning operations.



Sylvania Reflector Fluorescent Lamps provide up to 60% more useful, directed light.

## Sylvania offers a new, complete line of reflector fluorescent lamps

Now you can enjoy up to 60% more useful light with Sylvania Reflector Fluorescent Lamps . . . using your present equipment.

The new, expanded Sylvania line of reflector fluorescent lamps includes both Single-Pin and Bi-Pin types in a wide range of colors and wattages.

The reflector fluorescent lamp has a built-in reflector that directs more usable light where it is needed.

This increased, controlled brightness provides better light in bare-lamp installations without reflectors...or where fixture reflectors quickly accumulate light-reducing dirt. Sylvania reflector fluorescent lamps offer high light output... save time and dollars usually spent on maintenance. They are particularly suited for industrial areas... for supermarkets and retail shops, general high ceiling strip lighting, and for directed light in windows, cabinets, coves, valances, etc.

For complete information about the new line of Single-Pin and Bi-Pin reflector fluorescent lamps, call your Sylvania Supplier, or write:

Sylvania Electric Products Inc. Lighting Division, Dept. 7I.4507 60 Boston Street, Salem, Masss. In Canada, Sylvania Electric (Canada) Ltd. Shell Tower Building, Montreal

SYLVANIA V

... the fastest growing name in sight

LIGHTING . RADIO . ELECTRONICS . TELEVISION . ATOMIC ENERGY

Sylvania Reflector Fluorescent Lamps come in a variety of colors and wattages for all fixtures.

#### SINGLE-PIN

| Longth | Watts | Bulb | Color        |
|--------|-------|------|--------------|
| 48"    | 39W   | T12  | Cool White   |
| 96"    | 73W   | T12  | Cool White   |
|        |       |      | Werm White   |
| 96"    | 73    | T12  | Super Deluxe |
|        |       |      | Cool White   |

#### BI-PH

| BI-PIN |       |      | PIPE                             |
|--------|-------|------|----------------------------------|
| Longth | Watts | Bulb | Color                            |
| 18"    | 15    | T12  | .Cool White                      |
| 18"    | 15    |      | Super DeLuxe<br>Cool White       |
| 24"    | 20    |      | Cool White                       |
| 24"    | 20    | T12  | .Worm White                      |
| 24"    | 20    | T12  | Super DeLuze<br>Cool White       |
| 36"    | 30    | BT   | Cool White                       |
| 48"    | 40    | T12  | .Cool White R.S.*                |
| 48"    | 40    | T12  | .Worm White R.S.*                |
| 48"    | 40    |      | Super DeLuxe<br>Cool White R.S.* |
| 48",,, | 40    | 712  | .DeLuxe Warm<br>White R.S.*      |
| 60"    | 90    | T17  | .Cool White                      |



Size-marked for quick identification in 43 stock sizes

And these precision-machined solid steel collars stay put because they are held in place on the shaft by the famous Unbrako Self-Locking Socket Set Screw. Authorized industrial distributors carry complete stocks in sizes from ½" to 3" inclusive. Write for Bulletin 868. STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.

STANDARD PRESSED STEEL CO.

MALLOWELL POWER TRANSMISSION DIVISION



For More Information Circle No. 363 on Inquiry Card-Page 17



Difficult . . . Intricate. These perfectly executed BELLOWS



Write, wire, phone for more complete information, TODAY. If you have prints, ask for quotation,

## MECHANICAL RUBBER PRODUCTS CO. America's Newest and Most Modern Rubber Works

Doris Drive • Warwick, New York • WArwick 55-2271

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#### Tool and Die Directory Lists 1000 Plants

An up-to-date Directory of Special Tooling Services offered by NTDMA members has just been issued by the National Tool & Die Manufacturers Association. The 68-page, pocket-size directory lists approximately 1,000 contract tool and die plants throughout the U.S. and Canada.

Information given includes company name, address and telephone number; names of individuals to contact; and the specific products and services offered by each association member.

Copies of this directory can be obtained by writing to George S. Eaton, National Tool & Die Manufacturers Association, 908 Public Square Building, Cleveland 13, Ohio.

#### Car Unloading Time Slashed 50%

A unique method of unloading rail hopper cars filled with chemicals has reduced unloading time 50% for Climalene Co. The firm dug out a pit 6 ft wide and 7 ft deep, extending from its basement outward under the switch track where shipments are received in hoppers. The pit was walled with concrete. Chemical compounds fall from the rail hoppers into a small hopper underneath the rails in the plant basement. From the hopper the material is emptied into a specially built sift-proof bin carried on an Automatic Docker electric-driven industrial truck. The sift-proof bins can be loaded in 2-1/4 minutes with between 1600 and 2200 lb of raw chemicals depending on the materials density. A carload of material weighing 110,000 lb can be unloaded and stored by one operator in 3 hours.

For More Information Circle No. 365 on Inquiry Card—Page 17→ PURCHASING



**QUALITY...the Basic Element** for this Line of Pipe Fittings...

- and that's not all. Grabler gives you all-round quality and excellence in Square "Gee" Pipe Fittings, plus dependable distribution and service; plus the completeness of the Square "Gee" line of pipe fittings, nipples, unions, and hangers; and plus packaging that eases and aids handling. These are the extra ingredients without extra cost to you found in Grabler Square "Gee" Pipe Fittings and which have proven themselves over the years as important aids for the users of pipe fittings.

Benefit from these "down-to-earth" advantages by ordering Grabler Square "Gee" Pipe Fittings from your wholesaler.

Dependable Distribution from these Warehouses: New York . Philadelphia . New Orleans Atlanta • Pittsburgh • Cincinnati • Dallas Chicago • St. Louis • Detroit • Denver

Minneapolis . San Francisco . Los Angeles

## GRABLER

The GRABLER



Manufacturing Co. • 6565 Broadway • Cleveland 5, Ohio

## They made wheel



## do the work of 12

Production people at Whitin Machine Works frequently ask the "impossible". For example, Bill Todd, foreman of Whitin's Central Grinding Department, wanted *one* grinding wheel that would do all the centerless grinding that had previously required twelve different wheels. Ralph Lincoln, Whitin's Purchasing V. P., was enthusiastic . . . because he's always searching for ways to cut costs and simplify purchasing and stocking.

They called in Bay State distributor Vic Ericson who went to work with Bay State's Sales Engineering Staff. Result: A single wheel that handles parts 1/8" to 5" diameter in brass, bronze, aluminum, cast iron, Meehanite and various steels...grinds finishes as fine as #2RMS, averages #16...eliminates all wheel changes due to varying job requirements.

Whatever your company's abrasive problems may be, you'll find Bay State representatives ready to help and competent to work out practical solutions.



## BAY STATE ABRASIVES

Bay State Abrasive Products Company, Westboro, Mass.

Branch Offices and Warehouses: Bristol, Conn., Chicago, Cleveland, Detroit,
Pittsburgh. Distributors: All principal cities. Bay State Abrasive Products
Co. (Canada) Ltd., Brantford, Ontario.



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Our ability to I use the best of three stamping techniques, each our own exclusive development. assures lowest possible cost on any quantity-one to a million or more.

A FEW PIECES-at Experimental or Pilot Stage

NO DIES! Our machine cut method, applying custom-built slitters, cutters, saws, files and stock punches-PLUS special techniques and skills-produce these small quantities at very low cost.

SHORT RUNS

TEMPORARY LOW-COST TOOLING! To produce something more than a few, but less than high production quantities, our simple contour dies-PLUS special purpose presses - keep costs

PRODUCTION RUNS

MODEST DIE CHARGES on larger quantities! Here is where our regular production tooling applies to advantage...to

deliver high quantity Stampings, and at lowest possible unit cost.

SHORT . MACHINE

You can rely on it ... WE LOOK AT ALL THREE - then determine the best method for fast, efficient, lowcost service. Let us quote on your next Stampings job.

LAMINATED

Free 12-page booklet shows how to save on stampings . . . write for it.

#### **STAMPINGS** DIVISION

"One Piece or a Million" 2407 Union Street, Glenbrook, Conn. COMPANY, INC.

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news

#### Aid for PA's on Work Clothes Buying

Purchasing agents who buy work uniforms often have trouble determining how well the garments will stand up under actual working conditions. Some of these problems can now be eliminated by making use of the free consulting service offered by the Institute of Industrial Launderers. The Institute will not recommend the products of any manufacturer or of any laundry company to maintain them, however, it will recommend general specifications for individual companies after a careful analysis of the conditions under which the uniforms will be worn.

One company which has already taken advantage of the free consulting service is Standard Oil Co. (Indiana). After meetings among Standard Oil officials and Institute representatives, specifications for the quality and appearance of work uniforms were established. Tests were run on the materials selected to make certain they would stand up under wear and also retain their color fastness. At present, three sources of supply for the uniforms have been approved; others are still being tested.

The Institute of Industrial Launderers is located at 1346 Connecticut Ave., N.W. Washington, D.C.

FOR MORE INFORMATION ON PRODUCTS IN THIS ISSUE PLEASE USE INQUIRY CARD-PAGE 17

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302

what's behind the specs?

"you'd think this B&W ell was custom-made for the job!"



"Dimensional accuracy is a 'must' since fittings like these are going into a pre-cut, pre-assembled piping section. Borderline tolerances would result in costly fill-in welding or remachining at the time of installation if the fabricated section did not fit. That's why experienced Purchasing Agents specify B&W Fittings, Management, and welders too, appreciate their dimensional accuracy."

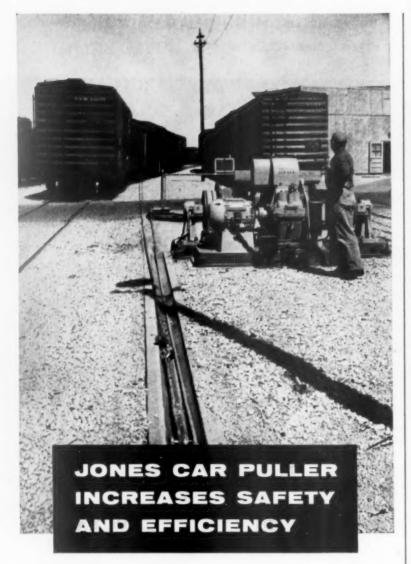
B&W Seamless Welding Fittings and Forged Steel Flanges are available through B&W District Sales Offices and any qualified welding fittings distributor, in

carbon steel and the famous B&W CROLOYS.

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION • FITTINGS DEPARTMENT
3839 WEST BURNHAM STREET • MILWAUKEE 46, WISCONSIN



Seamless welding fittings and forged steel flanges, seamless and welded tubular products - in carbon, alloy and stainless steels



This Jones two-way car puller has materially increased freight handling efficiency at Corn Products Refining Company's Pekin, Illinois, plant. To move cars on either siding, the operator merely hooks a cable to one of the cars and pushes a button on the control panel. Only a small part of one man's productive time is needed, and the system is both safer and faster than former methods.

The Jones car puller is but one of the many types of Hewitt-Robins equipment for helping industry solve its bulk materials handling problems. To find out how H-R products and services can help you, consult your classified telephone directory for the nearest H-R representative, or contact Hewitt-Robins, Stamford, Connecticut.

## H HEWITT-ROBINS

CONVEYOR BELTING AND IDLERS...POWER TRANSMISSION DRIVES
INDUSTRIAL HOSE...VIBRATING CONVEYORS, SCREENS & SHAKEOUTS
For More Information Circle No. 369 on Inquiry Card—Page 17

#### BOOK REVIEWS

#### Statistics for Management

by B. J. Mandel

Dangary Publishing Co. Baltimore 15, Md. \$6.00

This book is specifically designed to give executives a better understanding of statistics as a management tool for decision making. Thoroughly covered are the principles which underlie the statistical approach and the basic methods of fact finding and analysis of data.

Sampling is emphasized as a short cut to fact finding. Methods covered include use of frequency distributions, averages, measures of variation and correlation, index numbers, and time series. The book is particularly useful to purchasing executives interested in establishing purchase price and product indexes.

#### Manufacturing Methods and Processes

by Arthur C. Ansley

Chilton Co. \$12.50

This book is specially written for the purpose of giving the purchasing executive and others a broad general background on the latest developments in manufacturing methods and processes. In it, methods and equipment used in each process are described. There are over 450 illustrations. Emphasis is on the type of parts made by each process, chief applications, and cost. Besides covering old standbys like sand casting, machining, stamping, etc., it also covers newer developments like powder metallurgy, investment casting, plastics, ultrasonic machining, dielectric heating. printed circuits, and automation. Even assembly techniques aren't neglected.

### HOW ARE THESE PARTS MADE?

What's your answer? (hint: Either a die casting, permanent mold casting or) impact extrusion. Correct answers are shown below.



PRECISION engineered, hard-to-make parts are a specialty at Thompson's Light Metals foundry. As examples of Thompson's versatility, the parts above clearly demonstrate our ability to produce widely different products of exacting requirements.

Regardless of your product, if you use castings or impact extrusions, our creative engineers can help you simplify your production and cut costs. Let us quote on your plans. Write Department Light Metals Division, Thompson Products, Inc., 2269 Ashland Road, Cleveland 3, Ohio.

The correct answers to the above are: Die Cast-1, 4, 6, 12. Permanent Mold Cast-2, 5, 9, 10. Impact Extruded-3, 7, 8, 11.

You can count on



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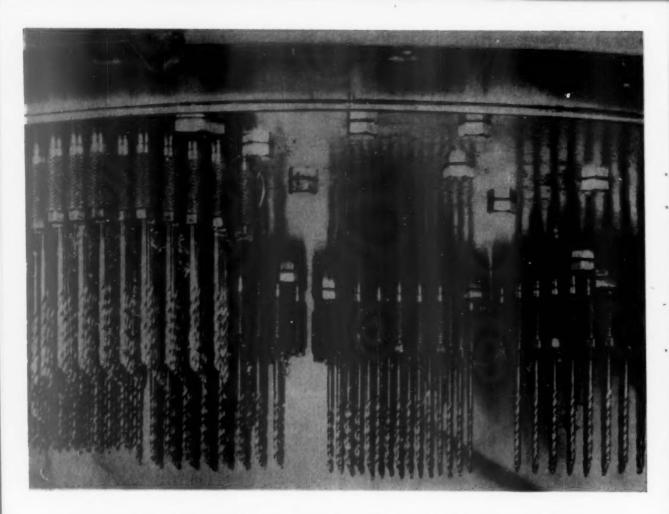
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For More Information Circle No. 370 on Inquiry Card-Page 17



That's all this man thinks about . . . millions of swiftly, cleanly drilled holes in metal . . . and how to deliver them to you, on your particular job . . . at lowest possible cost.

And he's the man who can do it . . . because he's backed by the best engineering brains in the cutting tool industry . . . by the most complete line . . . by the most modern plant . . . and by an international

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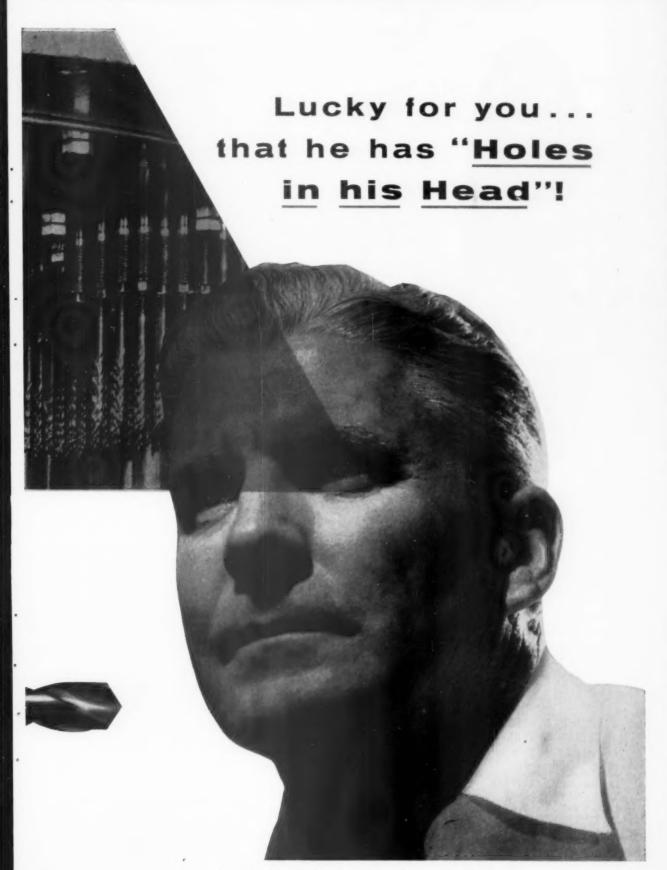
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Buy them by phone from
your Morse-Franchised Distributor and save ordering time



another reason why MORSE

means "THE MOST"

in Cutting Tools



For More Information Circle No. 371 on Inquiry Card-Page 17



High fidelity to your blueprints is what you have every right to expect from Kuhn & Jacob. In the hands of K & J's long experienced and skilled die makers, your design and pieces of steel are transformed into precision molds on which rest your assurance of perfect molding jobs. For the full story of K & J service in compression molding, send for booklet.



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#### BOOK REVIEWS

#### **Practical Electrical Wiring**

by H. P. Richter

McGraw-Hill Book Co. \$6.75

The author of this book is director of procurement and cost for D. W. Onan & Sons Inc. He has revised his well-known wiring manual to bring it in strict accordance with the latest National Electrical Code. The manual explains practical methods of wiring in plain language designed for the man who does the work. It's simple enough for beginners and yet is still valuable for seasoned veterans in electrical work. A good reference for the plant electrician or maintenance foreman.

#### Analysis for Production Management

by Edward Bowman and Robert Fetter

Richard D. Irwin Inc. \$7.80

In a new and unique approach to production management, this book is designed to help solve the economic problems of production management. Presented are the latest methods of analysis in the areas of programming, statistical analysis, and economic analysis. Purchasing executives will be particularly interested in the sections on economic lot size.

#### Fluctuations, Growth & Forecasting

by Sherman J. Maisel

John Wiley & Sons, Inc. \$7.50

Business forecasting is not a simple, easy process. But to the purchasing agent interested in maintaining the most economic inventory balance, a knowledge of forecasting is invaluable. This book shows how economic analysis can be used to help you and illustrates how forecasting can be profitably used as a basis for business decisions. Case studies help clarify exposition of theory.



If you have a product that is hard to label; if you need a removable label—or a Point of Sale piece that will definitely get posted, specify KLEEN-STIK! KLEEN-STIK makes sure your printed pieces will stick—tight—anywhere. Go on fast, without water, glue, tacks or tape. Every KLEEN-STIK piece pays its way—on glass, plastic, metal, polished surfaces, flexible packaging films and the usual paper surfaces. Stays until purposely removed. Your best buy—by the pioneers in the pressure-sensitive adhesive field.

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We do NO printing... your regular printer or lithographer can supply you with KLEEN-STIK to make your printing serve where no other advertising can get, stay, or tell-and-sell. Ask him for details and samples. Or write us.

#### KLEEN-STIK Products, Inc.

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Chicago 31, Ill

For More Information Circle No. 373 on Inquiry Card—Page 17 For More Information Circle No. 374 on Inquiry Card—Page 17-> MOVES SMOOTHER
WEARS 100% LONGER
COSTS LESS
CORROSION
RESISTS CORROSION

Now the ride that can't be equalled for bottles, cans, containers and packages is the revolutionary Atlas Electrolized FLAT-VEYOR.

A new simplified design makes it stronger and easier to clean. Lower coefficient of friction and precision construction assures smoother operation . . . allow plates to "float" along with no drag, chatter or vibration. Water lubrication of chain is sufficient. These, plus the wider bearing design, reduce wear to less than one-half that of other corrosion resistant chain. Atlas Electrolized FLAT-VEYOR has a much higher tensile strength than stainless steel making possible greater loads and higher speeds without breakdowns.

To speed conveying, cut maintenance, conserve cleaning time and reduce costs get the facts now on Atlas Electrolized FLAT-VEYOR . . . available in 31/4", 4", 41/2", 6" and 71/2" Electrolized or black. Write . . .

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West Pittston, Pennsylvania

ATLAS FLAT-VEYOR



Fischer SPECIAL MFG. CO.

471 Morgan St.

Cincinnati 6, Ohio

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#### **Professional Challenge**

(Continued from page 80)

real thought and work put into these programs.

We must continue to provide ourselves with an educational program that will qualify us as competent, well-informed purchasing agents. I believe that real emphasis should be directed toward the technical or engineering subjects because purchasing is headed that way.

I believe that a program of education requires planning and considerable self-discipline because it means a sacrifice of leisure time, and this is a bitter pill to swallow. So may I suggest and caution that none of us should let our desire for advancement exceed our willingness to

sacrifice some leisure time. This is like asking someone to do our

fighting for us.

Increasingly, the successful purchasing agent in America will be an intelligent and dedicated individual who sees that competence in this field will require specific study and experience, as well as the development of a distinct philosophy and mode of action appropriate to the purchasing profession and its code of ethics.

Today, with our larger population demanding more goods and better living, we spend around \$430 billion annually in terms of Gross National Product. By 1966, it is estimated that this country will have a Gross National Product of over \$550 billion, in terms of 1955 purchasing power. This will mean a proportionate increase in the amount of purchasing to be done, almost fifty per cent more than today. It is further estimated that during this time span until 1966, ten per cent of our country's production will be for products that don't even exist today.

#### Work with Salesmen

Many of you are probably thinking that you haven't even caught up on all the products that are available in your particular lines today, so how are you going to know anything about the new

(Please turn to page 314)



## NOSCO "CAN DO"

## takes mammoth projects in stride

Take the case of Gould-National Batteries, Inc. After personal inspection of many plastic molding plants, evaluating engineering personnel and facilities, Gould selected Nosco to produce a new line of ten stationary battery containers and their covers. Nosco "Can Do" started by assigning an experienced salesengineer to supervise and coordinate the program and report progress to Gould every two weeks. Twenty molds were completed in little more time than is usually required to produce one . . . from drawing board through chrome plating. Nosco molded the containers of acrylonitrile, running several molds simultaneously on giant pre-plasticized presses. The

molded pieces were annealed a truckload at a time, and decorated by an ingenious method which avoided duplication of screens. Finally, solvent dip-testing confirmed that the parts would stand up under prolonged field service.

The Gould-National contract is one more indication of the scope of Nosco "Can Do". More than service, engineering, and production know-how, Nosco "Can Do" includes the financial ability to carry large tooling and warehousing programs.

When awarding your large plastic parts program, call on Nosco "Can Do".

The first step is to write-



For other case histories—and for a glimpse of the Nosco plant and facilities, send for the free 12page brochure, "How the Nosco Plant Works to Produce Your Needs in Practical Plastics."

NOSCO plastics, inc. · erie 1, pa.

World's largest injection molding plant

## CDF PLASTICS AND FIBRE

#### CDF PRODUCTS OF TEFLON

CDF produces an unequalled range of electromechanical parts of Teflon\*—such as spaghetti tubing, glass-based laminates, flexible insulating tapes, sheets, rods, tubes, and finished parts. Now also available: cementable Teflon in supported and unsupported forms; can be cemented to itself and to most other materials with commercial adhesives. If you have a potential use for a product made from unsupported or reinforced Teflon—from tapes to high-heat-resistant printed-circuit laminates—your CDF sales engineer is the man to call. Meanwhile, write for the new CDF Teflon Folders.

\*duPont trademark for its tetrafluoroethylene resin

Heart of the best printed circuits-

#### CDF METAL-CLAD LAMINATES

Printed-circuit dependability begins at the base, and that's where CDF excels. Only CDF offers the combination of Teflon\* resin and woven glass cloth for use under sustained temperatures of 200° C. In addition, CDF offers a full range of metal-clad laminates to meet every known demand of printed circuitry. High foil-bond strength withstands soldering heats, reduces assembly rejects. Full line of metal-clad grades—woven-glass and paper-base—with Teflon\*, epoxy, and phenolic resins. Assembly costs go down when the job is done on CDF Metal-Clads! Write for CDF Metal-Clad Folder.

\*duPont trademark for its tetrafluoroethylene resin

#### CDF DILECTO LAMINATED PLASTICS



for electrical and mechanical applications

DILECTO®, made in scores of grades, is the highest-quality laminated plastics made for rigorous duty in electrical, electronic, and mechanical equipment. Characteristics vary with the grade, so get the expert assistance of your CDF sales engineer.

Resins available in Dilecto:

Phenolic Epoxy Polyester Silicone Melamine Teflon®

#### Bases for Dilecto:

Woven Glass Fabric Woven Nylon Fabric Woven Asbestos

Fabric Woven Cotton Fabric Glass Mat Asbestos Mat Cotton Mat

Paper (either cellulose or asbestos)

CDF gives fast technical and delivery service on sheets, tubes, rods, or complete fabricated parts of Dilecto plastics. Write for Catalog D-55-B.

\*duPont trademark for its tetrafluoroethylene resin



PLASTICS
FABRICATION
BY CDF SAVES
YOU TIME,
MONEY, WORRY

Let CDF's well-equipped machine shops assume the complete responsibility for delivery of plastics and/or fibre parts on time and as specified. No time is lost at CDF between raw-material production and final fabrication; in fact, special production runs are often scheduled to coincide with machining, to save the customer money on finished parts. When you let CDF do it for you, there's no problem of shortages, rejects, waste. Undivided responsibility pays off for you!



#### CDF HIGH-HEAT ELECTRICAL TAPES

Flexible insulating tapes for hand or automatic winding, made of silicone rubber, silicone varnish, Teflon\*, and Micabond, with and without backings. Color identification—CDF tapes of Teflon are made in the standard RETMA identifying colors. Call your CDF sales engineer, or write for test samples.

\*duPont trademark for its tetrafluoroethylene resin

## **PURCHASING NEWS**



#### DIAMOND VULCANIZED FIBRE

keeps costs down

Known for over sixty years as the standard of quality in fibre, Diamond® Vulcanized Fibre is made in many grades (bone, fish-paper, trunk, commercial, built-up) and is available in sheets, rods, tubes, strips, rolls, or formed specialties. Write for Catalog DVF-55.

LOW-COST VULCOID Resin-impregnated Fibre.

Vulcoid (made only by CDF) combines the desirable electrical properties and mechanical adaptability of vulcanized fibre with the great moisture-resistance and dimensional stability of phenolic laminates. UL-approved as Class A insulation in electronic equipment. Write for Bulletin V-55.





#### CDF CELORON MOLDED PRODUCTS

Celoron is a molded-macerated and/or combination laminated base bonded with phenolic resins. High strength, long life, and low cost are the characteristics of molded electro-mechanical parts made from CDF Celoron®. Its good electrical properties make Celoron an ideal molded insulator, while its high mechanical strength makes it an excellent material for gears, couplings, intricate static-free loom parts, etc. Get samples and Catalog C-56 by writing to CDF or asking your CDF sales engineer.

For a better motor or generator—

#### CDF MICABOND INSULATING PARTS

CDF mica V-rings and slot liners insulate America's best-selling motors and generators. Finest-quality mica splittings insure highest heat-resistance and insulation under severe operating conditions.

Forms of Micabond® available: Sheets; Tubing; Tapes (with backings of cotton, silk, paper, woven glass, and Mylart polyester film; Fabricated Parts of various shapes. CDF supplies and fabricates Micabond to your strictest specifications—on time and at low cost. Call your CDF sales engineer or write for samples of Micabond and Catalog M-55.

tduPont trademark

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## CONTINENTAL-DIAMOND FIBRE

A SUBSIDIARY OF THE BUDD COMPANY . NEWARK 41, DELAWARE

For More Information Circle No. 377 on Inquiry Card-Page 17

## There is a difference







Regardless of your abrasive needs—coated abrasives, grinding wheels, honing stones, abrasive grain—Mid-West, with its modern facilities, vigorous research and development and trained abrasive engineers is your one sure source for complete satisfaction.

and progressive thinking makes the difference



MID-WEST ABRASIVE CO. 510 S. Washington St., Owosso, Mich.

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#### **Professional Challenge**

(Continued from page 310)

ones? Well, there is a statement that was made by a high level executive in a large company who said "in his opinion, the company can bring to bear only ten per cent of the total knowledge available on the design and manufacture of its products. This means that the additional 90 per cent, or as much of it as possible, must be gained from people outside the company." And the greatest single source for this kind of knowledge is our suppliers' personnel.

The purchasing agent and the salesman will need to establish a deeper, more mature understanding of each other's responsibilities than exists today. The impact of mechanization and automation, a more sophisticated competitive market, the ever-present threat of inflation will demand the very best that each has to offer in the way of creative skill and professional competence. Our suppliers' representatives must be welcomed, cultivated, and trusted to the same extent as any other part of the organization. The purchasing agent, I believe, is in the unique position in this case. It is easier for him, being the customer-to broach new ideas or relationships than the salesman. In fact, the purchasing agent, in discussing his plans, both longand short-range, with the representative will have to become a salesman himself. In spite of his natural desire to lower costs, however, all signs of pressuring must be completely discarded. Both must realize that in their negotiations and discussions, each must obtain a fair price, and each must always be a free agent. This is the challenge. To work together, each obtaining a fair profit, each always remaining a free agent.

#### **Small Business**

The success of the country's technological level is mainly due to the thousands and thousands of small businesses engaged in varied types of work as you can imagine—all the way from collecting and dyeing spider-web silk

(Please turn to page 316)
For More Information Circle No. 390
on Inquiry Card—Page 17→
PURCHASING





Wider diameters with less cracking on specials



Up to 4 times the die life on production runs



Eliminate one shaving operation



Consistent quality products

.for UNIVERSAL using

KEYSTONE XI WIRE

## lowability is THE

Here are a few products cold headed by Universal Screw Company, Evanston, Ill. This firm has used Keystone Heading Wire since 1950. Their president, Arnold Meyer, says, "We prefer Keystone for their flexibility, prompt attention, freedom from complaints on their wire and willingness to work with us. We have found Keystone Wire gives less grief, and we've been able to produce many difficult parts because of the exceptional flowability of Keystone Heading Wire. Keystone's delivery schedules are strictly adhered to. We have cut our inventory substantially because of Keystone's excellent service."

See your Keystone representative for complete details - or, for the name of Keystone Wire users who can help you, call us.

Keystone Steel & Wire Company, Peoria 7, Illinois

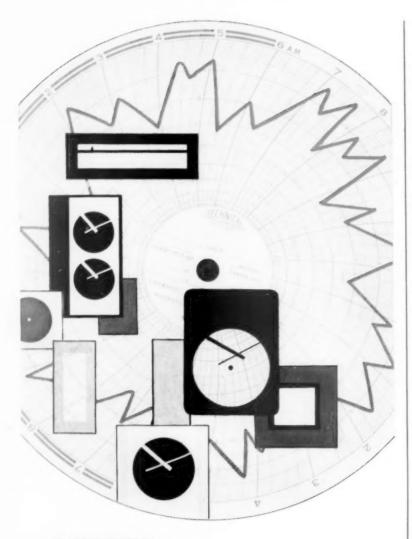


Keystone Steel & Wire Company, Peeria 7, Illinois

Brand New . . . COLD HEADING FACTS FOLDER . . . send coupon today! New folder discusses uses, applications, methods, technical facts, wire requirements.

View of a few of the modern thread rolling machines

## WIRE FOR INDUSTRY



#### CHARTS...

FOR ALL RECORDING INSTRUMENTS IN YOUR PLANT available

vallable from 1ECHNICAL

Technical can supply *circular* and *strip* charts for all instruments in your plant...many direct from stock! Here's a complete chart service designed to take details off your hands...at less cost, too! Write for Bulletin 57.



## 1ECHNICAL SALES CORPORATION

National representatives for: STAEBLER & BAKER, INC. TECHNICAL CHARTS, INC. Clayton, N. Y. Buffalo 10, N. Y.

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#### **Professional Challenge**

(Continued from page 314)

for use in miscroscopes and bomb sights to the making of prototypes of civilian and military aircraft.

The type of industrial future that I have tried to outline will depend upon a broad foundation made up of highly skilled suppliers, of which Small Business will be a major contributing factor. Competition for markets is more fierce than ever before. Technological change is moving faster, to cut production costs and to improve the product. The company who does it first usually wins.

We need a strong line of these small business suppliers for our respective companies, and they need us. But it is the professional purchasing agent who can make the most of the benefits these suppliers have to offer.

The major problems of small businesses mainly center around three things: lack of capital, current tax rates, and competition for available management skills. I believe that an effort should be made to assist small concerns as much as possible to solve these problems.

The smart purchasing agent will take advantage of the benefits that small suppliers have to offer in the way of special knowledge and special skills producing quality products at fair prices. By a close working relationship with these suppliers, the purchasing agent helps the supplier remain economically healthy, by providing informative assistance in operating know-how, and organization setup, if needed and requested. But this relationship can only come about by frank discussion of common problems, mutual respect, and adherence to high ethical standards. Above all, we must be sure that in our negotiation with suppliers, they stand to make a fair profit that will keep them as free and independent agents, but at the same time offer a quality product that gives us a definite and distinct advantage for our company.

As professional purchasing men in working with our suppliers and

(Please turn to page 320)

## Attention! All Users of Nickel Alloys...

## **New Driver-Harris** Vacuum Melting Service **Now in Operation**

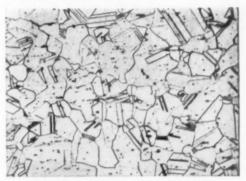
After many years of experience with vacuum melting programs, Driver-Harris now offers a complete vacuum melting service for almost all of the 132 special purpose alloys made by this company.

The specific benefits gained by vacuum melting in the production of nickel-chrome alloys are today clearly established. They are:

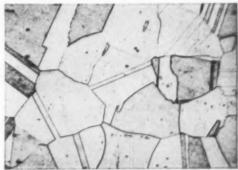
- Much closer control of analysis—particularly in alloying with the highly reactive elements, Titanium, Aluminum, Columbium, Calcium, and Zirconium. The normally high affinity for nitrogen and oxygen these elements have is completely eliminated in vacuum melting, thereby opening new avenues in alloy production.
- 2. Great reduction in inclusions, especially oxides and nitrides, results in higher ductility and tensile properties. In fine wires, the improvement in properties is frequently so great that wire sizes may be reduced without sacrifice of strength. An example of the greatly improved microstructure is illustrated in the metallographs shown.
- 3 Complete elimination of gas, not from the surface only but from the entire mass. Alloys so produced are therefore more desirable in the manufacture of electron tubes.
- 4. General improvement in electronic, electrical, and mechanical properties to meet specifications. Because closer control of analysis is a primary advantage of vacuum melting, we can now achieve these specific improvements with remarkable certainty.

Almost all of the Driver-Harris Alloys now vacuum melted and processed under close physi-\*T.M. Reg. U.S. Pat. Off.

cal and analytical control show improvement in one or more of the above ways. If you are seeking further improvements in the D-H Alloys you use, inquire now for information on how Driver-Harris Vacuum Melting Service can help you. Address your inquiry to Dept. VMS.



Polished and etched sample of Air Melted NICHROME\* V in annealed condition



Vacuum melted NICHROME V, annealed, Note that reduced inclusions result in much larger grain size for the same annealing treatment.



Driver-Harris HARRISON, NEW JERSEY

BRANCHES: Chicago, Detroit, Cleveland, Louisville, Los Angeles, San Francisco In Canada: The B. GREENING WIRE COMPANY, Ltd., Hamilton, Ontarie

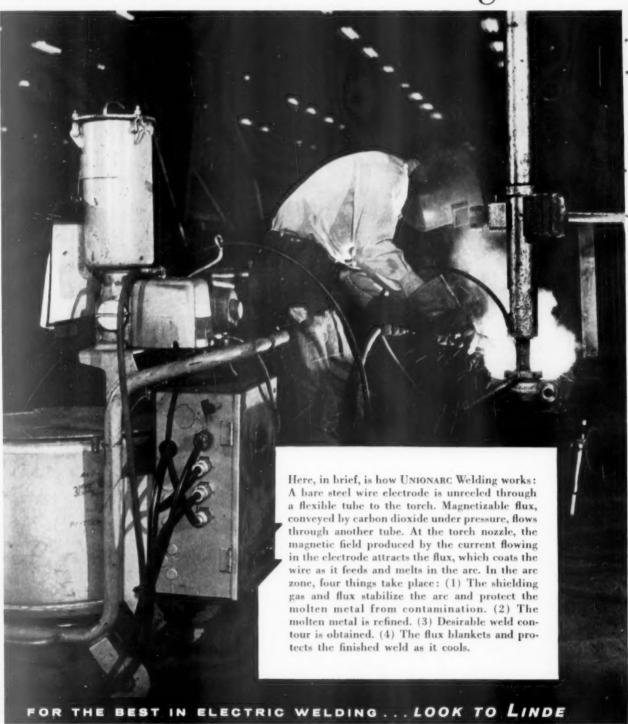
MAKERS OF THE MOST COMPLETE LINF OF ALLOYS FOR THE ELECTRICAL, ELECTRONIC, AND HEAT-TREATING INDUSTRIES

For More Information Circle No. 379 on Inquiry Card-Page 17

JULY, 1957

317

# Wow...LINDE offers you another UNIONARC Magnetic



## modern welding method— Flux Gas Shielded Arc Welding

UNIONARC is an entirely new method of welding steel in all manual positions...

#### VERTICAL



#### **OVERHEAD**



#### DOWNHAND



A completely new concept for manual welding of mild steel has been developed by LINDE. Called UNIONARC Welding, the method uses a continuously-fed bare steel wire electrode, which is magnetically coated with flux and shielded by carbon dioxide. The torch can be easily handled in all welding positions—vertical, overhead, downhand. Manual welds can be made at higher speeds and at lower cost than with covered electrodes. UNIONARC Welding produces high-quality welds in steel, even when moderate amounts of rust, scale, and moisture are present.

Among the numerous advantages of Unionarc Welding are these: Rate of operation is up to three times faster than with covered electrodes. There is no stopping to renew electrodes, since a single loading of wire can be fed smoothly and continuously for periods up to a week. Manual skill needed is no more than that required with covered electrodes. In vertical and overhead positions, the deposition rate in Unionarc Welding is two to three times greater than with covered electrode methods; in downhand positions, up to twice as great. There is practically no spatter—

the little that appears is easily brushed away, leaving a clean, smooth weld.

LINDE has made many notable contributions to welding. Among these are the introduction and development of submerged are welding (Unionmelt Welding), non-consumable electrode, inert gas shielded are welding (Heliare Welding), and the development of Sigma (shielded inert gas metal are) welding. LINDE's newest method, Unionare Welding, is another first—a truly important contribution. Its simplicity and versatility make it unique. Its efficiency and economy have been proved in actual production work. Write now for details about Unionare Welding, or call the LINDE office nearest you.

LINDE COMPANY, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y. Offices in other principal cities. *In Canada*: Linde Company, Division of Union Carbide Canada Limited.

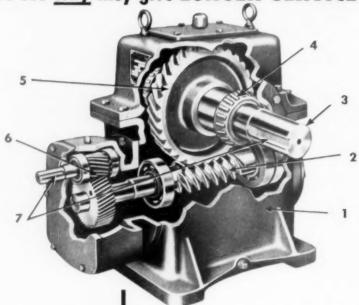
The terms "Liver," "Helianc,"
"Unio-mell," "Unio-abc,"
and "Union Cambine" are
trade marks of Union Carbide Corporation



inde CARBIDE

## Look Treside a Foote Bros.

### **ENCLOSED WORM GEAR DRIVE** to see why they give LONGER SERVICE



#### I EXTRA STRONG CAST HOUSING

Provides rigid mounting and alignment of caps and bearings. Made of high quality

#### 2 PRECISION ALLOY STEEL WORM

Integral with oversize shaft. Carefully matched to worm gear for quiet, trouble-free

#### 3 OVERSIZE OUTPUT SHAFT

#### 4 HEAVY DUTY, EXTRA LARGE BEARINGS

Oversize bearings used throughout unit. Worm bearings are combination single row radial and angular contact ball bearings, Input shaft bearings are single row radial type.

#### 5 WORM GEAR

Precision generated from uniform density, high hardness virgin bronze alloy casting. High load carrying capacity.

#### 6 HEAT TREATED HELICAL GEARS

Shaved for full tooth contact. inion integral with input shaft. Gear locked in position on worm shaft extension.

7 Just one of 10 different types, in a wide range of sizes, ratios and shaft arrangements.

this trudomark stands for the finest industrial gearing made

T. M. REG. U. S. PAT OFF



One look at the oversize bearings, larger shafts, precision made gearing and the sturdy housing of a Foote Bros. Hygrade Worm Gear Drive tells you that this is a workhorse unit that will stand up and deliver under the toughest conditions.

Notice the carefully balanced design . . . greater mass where it's needed . . . the elimination of weight when it contributes nothing to efficiency . . . strength and toughness at the right places . . . the correct gear alloys ... the compact design, and above all, the simplicity and ruggedness of this unit.

When you know the inside story of Foote Bros. Hygrade Worm Gear Drives, you can understand why they have built a reputation for quality, dependability, and performance that is unmatched by others.

Call in a Foote Bros. Field Engineer. Take advantage of our long experience in this business. Let us help you select or specify the most economical drive for your application.

Write for Engineering Manual HGB. It contains complete information on Hygrade Enclosed Worm Gear Drives.

Better Power Transmission Through Better Gears

FOOTE BROS. GEAR AND MACHINE CORPORATION

4577 South Western Boulevard

For More Information Circle No. 381 on Inquiry Card-Page 17

#### **Professional Challenge**

(Continued from page 316)

their representatives, we must assure them that they can expect fair and equal opportunity for profit and steady business in competition with others. More than this, they can also expect recognition of their dignity and standing in the community, warm and friendly associations, and the assurance that they are dealing with a fair-minded company.

As President of the National Association of Purchasing Agents, I charge each and every one of you to give complete and continued devotion to the high ethical principles for which we stand and for rendering the ever increasing professional service to our companies that will contribute to a prosperous economy and the national security, and to constantly be aware that by our personal actions, people judge the company for which we work to see as to whether it measures up to their ethical and social expectations and to the permanent aspirations that are associated with the United States of America.

#### Centralized or Decentralized

(Continued from page 89)

has been that decentralized buying is working satisfactorily, and we have been able to maintain adequate control."

Example 2: This company is broken up geographically. Its purchasing is done mainly in four points. It does not have so-called plant buyers. All purchasing personnel are located at these main four points. They state that their purchasing operations are decentralized to the extent that the divisional purchasing offices handle completely all of the material and equipment required by the company generally located in the geographical area served by the respective purchasing office. However, there are two general exceptions to this practice. Commodities used by one or more departments at various locations

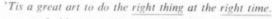
(Please turn to page 324)



Once there was a fisherman who enjoyed playing the bagpipes as much as he enjoyed fishing. Upon a balmy Summer day, he seated himself on the river bank and played a series of gay tunes... hoping this would attract the fish into jumping right onto the shore. But, nothing happened... so, he cast a net into the water and soon drew it out filled with fish. Watching the fish dancing and flapping about in the net, the fisherman shook his head and remarked:

"I will have none of your dancing now...since you wouldn't dance when I piped!"





... and this same "great art" is just what is embodied in famous ADAMANT, the original high temperature cement ... for instance, the bonding strength of ADAMANT increases as temperature rises ... is as strong as the brick it bonds ... manufactured to perform just right at just the right time!

Designed to withstand extreme temperature differentials, pliable, ready-to-use ADAMANT has proved its versatility for a variety of other uses in maintenance and repair...comes ready-mixed in air-tight drums of 100, 250, and 500 lbs. There is more detail in our new Bonding Mortars Bulletin No. 3.

Yellow Pages of 'phone directory have your nearest ADAMANT Distributor.





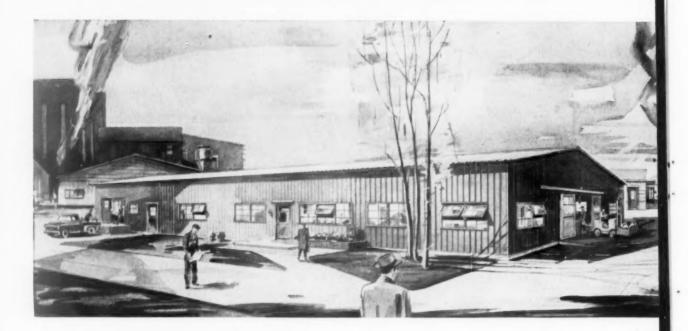
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## otfield

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swanson and clymer sts. philadelphia 47, penna.



# NEW TRUSCON STEEL "BUDGET OFFER TOP UTILITY AT LOW,

Here's the latest design by the pioneer of prefabricated steel buildings. Simplified design using standard Truscon products brings the cost down low. It's a quality building, with a tight, dense, galvanized coating that's the product of a new Republic Steel continuous galvanizing line. More rust-resistant than ever. No painting needed.

Truscon "Budget Buildings" now are available for immediate delivery in widths of 32, 36, 40, 44, and 48 feet ... 12- and 14-foot heights ... lengths as long as you want to make them. All elements are

engineered for fast on-site erection. When erected, you have a fire-resistant building that's smartly styled, and designed for community acceptance. Dis-assemble, move, and re-erect it where and when you please.

Your "Budget Building" order will be filled fast from "off-the-shelf" stocks of preengineered materials. It will be shipped to your site as a package—all roofing, siding, windows, doors and hardware included. When you need a building and you're tied to a budget, give Truscon a call. Send coupon for facts.

# REPUBLIC



World's Widest Range of Standard Steels



FOR MINING

Truscon's new building is lightweight, flexible, can be erected quickly at mine and fleld locations. Strong and sturdy, it provides protection for fleld crews, engineers, administration staffs, offices, and emergency medical stations. It is built for permanency, engineered for easy removal.



tandardization. Recommended for storage and warehousing, office space, plant protection, tool and parts depot, many more applications. You can standardize systems, methods, inventories, in various locations.

# BUILDINGS" LOW COST



FOR TRANSPORTATION Doors and windows are available in a choice of sizes, types, and locations. Doors can be swing or slide types of standard Truscon construction and design. The new building is recommended for freight yards, passenger depots, maintenance depots, and other applications in rail, air, highway, and water transportation.





FOR OIL AND GAS Truscon's rigid frame design permits unobstructed head room for storing equipment and machinery. Roofing and siding are rust-resistant galvanized steel. No painting required. Area can be increased by extending either end. Building can be disassembled, trucked to new location and re-erected.

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| Please rush mor | e details on the low | -cost Truscon Standard |
| Steel Building. |                      |                        |
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## How Alcoa Aluminum Fasteners make good furniture even better



With your good name riding on every aluminum chair, chaise and settee, it pays to assemble with Alcoa® Aluminum Fasteners. You get perfect color match and lasting good looks with absolute protection against both galvanic and atmospheric corrosion. Your local Alcoa distributor has a complete stock of aluminum fasteners to meet your every need. He is listed in the Yellow Pages of your telephone directory.





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| Name    |   |
| Title   |   |
| Company |   |
| Address |   |

For More Information Circle No. 384 on Inquiry Card—Page 17

## Centralized or Decentralized

(Continued from page 320)

throughout the entire company's operations are purchased on a national basis at the central or general purchasing office. In some instances, departments other than purchasing are permitted to make purchases of a local nature within specific limits and under procedures prescribed by the home office. They conclude by saying: "Finally, it should be stated that whereas each division purchasing office is pretty well on its own, the general office does exercise over-all supérvision in matters of procurement policy and pro-

I also prepared a questionnaire consisting of 19 questions and had our purchasing department personnel contact 38 branch buying offices representing oil companies in Oklahoma, the Panhandle of Texas, West Texas, and the Gulf Coast. Of the 38 offices contacted, 20 were different companies ranging from smaller companies, to so-called fully integrated oil companies.

## Degree of Control Varies

The degree of central or home control varied greatly. The degree of administrative authority and dollar limitation on expenditures varied to a great extent. Some of these branch purchasing offices were limited both in scope and authority. They seemed to be entirely under the control of the major operating department, and in some instances their purchasing power was limited to a relatively few dollars; in other instances, only by budget limitations; and in still other instances apparently not limited at all. Some of the better organized branches had good knowledge of both their areas' and their companies' short and long-range programs. Others knew little of their own, much less their companies' development or expansion programs for the year involved. In many cases branch purchasing offices were operating on a day-today basis with little record or history of the past and no amount of

(Please turn to page 328)

11111111

# BLACK WEDNESDAY at KNICKERBOCKER TRUST . . .



For the first 9 months, 1907 was the most prosperous year the United States had experienced - and then quite suddenly, on Wednesday, October 23rd, the big Knickerhocker Trust Company of New York failed after an unexpected wave of withdrawals exhausted their supply of cash. Immediately, other banks all over the Country suffered runs and failed. People rioted in the Bronx. Industrial firms were forced to use "John Doe Checks" (checks made payable to John Doe," meaning 'cash') to meet payrolls, and merchants and others accepted these in lieu of cash. Almost overnight the Country went from boom to bust.

In this unfavorable atmosphere, John Christensen and Soren Sorensen came to Cincinnati to start their gear business. They weathered this storm and many others in the ensuing fifty years, and today The Cincinnati Gear Company is one of the Country's leading suppliers of custom gears. In fact, we won't take a back seat to anyone when it comes to quality and workmanship, as our many satisfied customers will attest. Why not try us for your next custom gear order?

## THE CINCINNATI GEAR CO.

Fifty Years of "Gears-Good Gears Only"





For More Information Circle No. 385 on Inquiry Card—Page 17 For More Information Circle No. 386 on Inquiry Card—Page 17→



## PURCHASING

LATEST PROPERTY AND APPLICATION DATA ON

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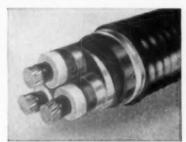
polyethylene

NEWS

## Du Pont ALATHON® polyethylene resins offer an economical solution to a wide range of problems



PIPE MADE OF "ALATHON" 25 is durable, flexible, light in weight and easy to install. Specially formulated from a virgin material, pipe of ALATHON 25 polyethylene resin is better able to withstand top-rated pressures, constant cycles of freezing, and corrosive soil chemicals. The economical solution to many kinds of cold-water systems, pipe of ALATHON assures long, trouble-free service.



INSULATION AND JACKETING OF "ALATHON" used for wire and cable provide outstanding resistance to moisture, abrasion, heat, and weather. Because Alathon polyethylene resin features an extremely low power factor and dielectric constant, it offers remarkably low dielectric loss. Light-in-weight and easy-to-handle insulation and jacketing of Alathon speed installation time. . reduce maintenance costs.



COATINGS AND LAMINATES OF AN "ALATHON" provide excellent moisture-vapor barriers. This carton, used to package dental gypsums, utilizes a one-mil coating of ALATHON polyethylene resin to keep the powder from hydrating. ALATHON 16 is designed for coating applications of this type. (Board coated by H. P. Smith Paper Co., Chicago, Illinons, for Ransom & Randolph Company, Toledo, Ohio.



ELECTRIC COMPONENTS MADE OF AN "ALATHON" have outstanding dielectric properties, strength and resiliency. This lightweight potting mold, used by major aircraft companies is economically molded of ALATHON polyethylene resin. It is used to hold wiring in place and serve as an insulating medium. ALATHON 20 is recommended for use in this kind of application. (The potting mold shown in photo above is manufactured by Fawn Plastics Company, Inc., Baltimore, Maryland.).



CONTAINERS MADE OF AN "ALATHON" are used to ship, store and dispense liquids ranging from fountain syrups to corrosive chemicals. This CUBITAINER is made of a strong, chemically resistant insert with a built-in pour spout nested in a paperboard carton. Cubitains are shipped collapsed and nested. To use, inserts are inflated, filled, and the spout is then heat-scaled. ALATHON 14 is particularly well suited to this type of application. (Cubitainer manufactured by Hedwin Corp., Baltimore, Maryland.)



ICC APPROVED ORUMS MADE OF AN ALATHON are strong, light-in-weight and chemically resistant. Drums molded of ALATHON polyethylene resin are unbreakable and fit all standard steel drums. All flanges are threaded to fit standard plugs and standardfilling and ventingequipment. This 30-gallondrum is economically molded in one piece. (The unit shown above is by Delaware Barrel and Drum Ca., Inc., Wilmighton, Delaware) ALATHON 20 is best suited for this kind of application.

For industrial and consumer products . . . ALATHON polyethylene resins are suitable for a continuously expanding range of applications, A variety of formulations of Du Pont ALATHON are now used in the food, pharmaceutical, cosmetic, toy, household and packaging industries. There are special formulations of ALATHON, each designed to meet specific requirements, ALATHON 25 has been formulated exclusively for

pipe use. A wide selection of Alathon polyethylene resins is available for various insulation and jacketing needs. For coatings or laminates, Alathon 16 is best suited. Alathon 20, 22, 17 or 37 are best adapted to a wide range of molded products. Application and property data are available without cost or obligation. To learn how an Alathon can satisfy your requirements, simply mail the coupon below.

## SEND FOR

Clip the coupon for additional data on the properties and application of this Du Pont engineering material.

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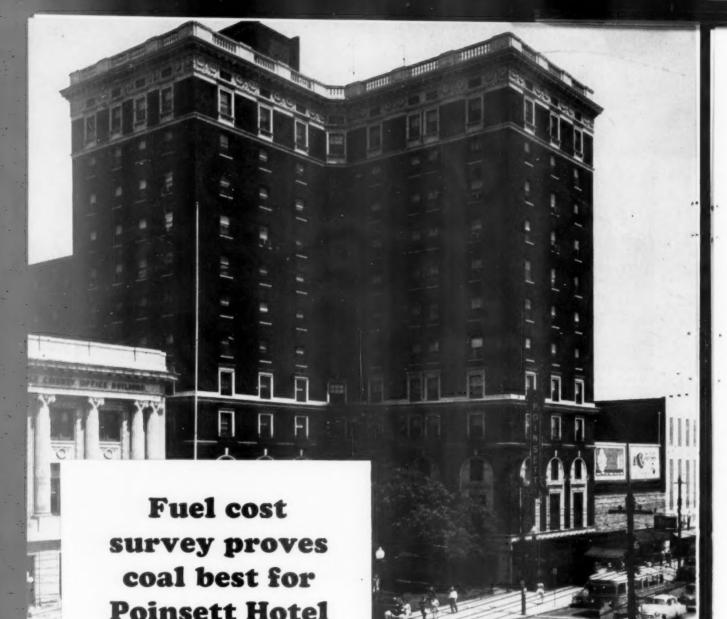
Name \_\_\_\_\_\_Position \_\_\_\_\_

Firm Name

Street Address

City\_\_\_\_\_State

Type of Business



The Poinsett Hotel, Greenville, S.C., recently decided to increase steam capacity by adding a new boiler in its power plant. At the time, management asked its consultants, The McPherson Company, of Greenville, to analyze costs of all three types of fuel available in that area. On the basis of cost per thousand pounds of steam, the other two fuels proved to cost 25% more than bituminous coal. According to The McPherson Company, "The net result of this study indicated

For additional case histories on burning coal the modern way or for technical advisory service, write to the address below.

investment and on operating costs."

that by continuing with the use of bituminous coal the owners would save on both the initial

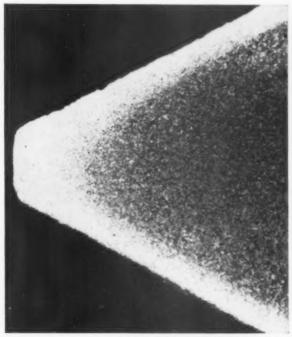
BITUMINOUS COAL INSTITUTE Southern Building • Washington 5, D. C.

## Consult an engineering firm

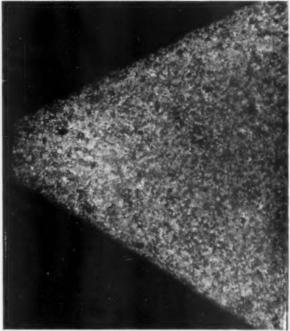
Designing and building hundreds of heating and power installations a year, qualified engineering firms can bring you the latest knowledge of fuel costs and equipment. If you are planning the construction of new heating or power facilities—or the remodeling of an existing installation—one of these concerns will work closely with your own engineering department to effect substantial savings not only in efficiency but in fuel economy over the years.

## facts you should know about coal

In most industrial areas, bituminous coal is the lowest-cost fuel available • Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar • Automatic coal and ash handling systems can cut your labor cost to a minimum • Coal is the safest fuel to store and use • No smoke or dust problems when coal is burned with modern equipment • Between America's vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and its price remaining stable.



Common heat-treated screw thread, with soft decarburized outer skin which causes excessive wear and breakage. Will laosen under vibration,



Thread with carbon restored, showing uniform hardness throughout. Insures accurate fit, freedom from scale. Permits tighter wrenching.

# What's Different About WESTERN Screw Products?

## 1. WESTERN offers product quality advantages

Product quality at WESTERN starts with careful selection of approved steels, and is guarded through production by many separate inspection operations. WESTERN's carbon restoration process assures uniform strength and hardness throughout the entire thread structure.



## WESTERN offers proved performance

WESTERN is the chosen source of many leading manufacturers in critical industries. For instance, leading makers of road building equipment whose

products must really take a beating, rely on WESTERN fasteners for rugged strength that stands up to the roughest treatment.



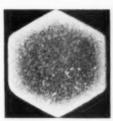
## WESTERN offers a complete line

We manufacture and maintain large stocks of all commonly used standard industrial fasteners—including cap screws, socket screws, set screws, pipe plugs, dowel pins, nuts and studs. Whatever the size of your order we can ship fast from stock.

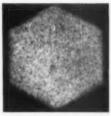


## WESTERN offers unusual facilities for design and development

Our experience with special precision-machined products has given WESTERN unexcelled experience in design and development work. This experience, applied to our standard products, assures you the efficiency and economy of the latest production methods.



Common hexagon socket key stock, showing the decarburized surface. Results in an undesirable soft outer skin. Greater wear on corners.



WESTERN hexagon socket key—after carbon restoration. Uniform hardness all the way through. Gives a stronger, longer-wearing key.

Write today for free catalog and prices

## WESTERN AUTOMATIC

Machine Screw Company

division of Standard Screw Company 378 Woodland Ave., Elyria, Ohio

PRECISION SCREW PRODUCTS, PARTS AND ASSEMBLIES SINCE 1873

← For More Information Circle No. 387 on Inquiry Card—Page 17 For More Information Circle No. 388 on Inquiry Card—Page 17 JULY, 1957



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## Centralized or Decentralized

(Continued from page 324)

perspective as to the future. Lines of company communication were inadequate or not fully used.

As to complaints or gripes: it appeared that the most consistent complaints were to the effect that they were not properly advised as to the short or long-range programs in respect to the department or departments that they were serving. Further, that visits from central purchasing department management were too seldom and usually poorly timed.

The study and the survey have been enlightening and helpful to our purchasing department. We have recently taken additional steps to broaden the scope, increase the responsibilities, improve efficiency, and add to the dignity of our six branch offices. It is our opinion that it is best for our purchasing department and our company to operate on a centralized purchasing department basis, decentralizing to the extent that we have a modification of centralized and decentralized. In our department we feel that our branch buyers and their personnel, including-in our case our warehouses, our salvage shops, and our fleets of heavyduty trucks, should report to our central purchasing department management and be on our purchasing department payroll and not on the payroll of any of the operating departments.

### **Advantages of Centralization**

We feel, with our centralized buying program and with our six branch purchasing department facilities, that we offer, through centralization:

- Advantages through our ability to get counsel and quick approvals from our company management.
- (2) The advantage of service of the manager of purchases and his assistants, employing when necessary and advisable the legal, tax, transportation, treasury, public relations, sales and even the medical departments; to be able through sales contacts, the (Please turn to page 330)



# Fasten it with STAINLESS STEEL for Better Looks - Longer Life

# LEADING PRODUCERS OF FASTENERS USE AL STAINLESS

A complete line of stainless steel fasteners—all types and sizes of bolts and nuts, rivets, wood and machine screws, cotter pins, washers, etc.—are made of AL Stainless Steel by the leading manufacturers in this field. Get in touch with them for catalogs and prices, or write us direct.

ADDRESS DEPT. P-91

AL Stainless Steel fasteners are non-rusting, non-staining. They will last as long as, or longer than, the materials they join. You can count on them to stand up through the years—both in strength and in bright good looks.

Best of all, stainless steel fasteners can be used anywhere. It isn't necessary that the materials to be joined are stainless these corrosion-proof fasteners are the perfect answer for joining other metals, woods, or plastics. Fasteners made of AL Stainless by leading manufacturers are produced in complete variety—every type and size that your job requires.

For improving quality and reliability wherever they're used—and for the economy of lifetime service—specify fasteners made of time-tested Allegheny Ludlum Stainless Steel. • For fabricators' names and any technical data or engineering help in the use of stainless steel, address Allegheny Ludlum Steel Corporation, Henry W.Oliver Bldg., Pittsburgh 22, Pa.

Make it <u>BETTER</u>-and <u>LONGER LASTING</u>-with

# **AL Stainless Steel**

Warehouse stocks carried by all Ryerson Steel plants



For More Information Circle No. 413 on Inquiry Card-Page 17



# Sewall's complete gear service can help you . . . call us!



Custom-made gears



Made-to-order sprockets



Our reputation is based on quality, service and price. If you're like our regular customers you're vitally concerned with these three factors when you buy gears. (1) Gears must meet your specifications exactly, in strict accordance with your prints. (2) Gears must be delivered as scheduled. (3) The price must be reasonable. Sewall gears are made by men who are fussy about specifications. We have a wide range of late-model machine tools, inspection instruments and checking equipment regularly serving customers across the nation. Our large modern plant is handy to rail, truck and air transportation.

Let us quote on your specifications!

Special gear racks—to order







Standard gear racks—in stock

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The Sewalt Story
... richly illustrated
with in-plant photos
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E. B. SEWALL MANUFACTURING COMPANY
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For More Information Circle No. 391 on Inquiry Card-Page 17

## Centralized or Decentralized

(Continued from page 328)

American Petroleum Institute, the National Association of Purchasing Agents and, by personal plant visitations, to know intimately sources of supply and their top management.

(3) The advantages of trained buyers who are specialized in their buying for particular operating departments.

(4) The advantage of buying in large quantities by contract or blanket ordering commodities to the price and delivery advantage of one or all operating departments.

(5) The advantage of effecting and carrying through in practice a company-wide standardization program.

(6) The advantage of fully exploiting new products or services.

(7) The advantage from a standpoint of controlling over-all company total inventory of materials.

(8) The advantage of cooperating with our sales organization and our suppliers in a mutual sales assistance program to the benefit of our company as a whole and our sources of supply who may also become valuable customers.

(9) The advantage of having a closely knit organization with centralized responsibility for results.

(10) The advantage of a supervisory training program.

(11) The advantage of receiving and training all suppliers equally.

Branches are instructed to buy operation, maintenance and repair items, limited investment items, and equipment on our central purchasing department office blanket orders, contracts, or commitments, or they can exercise their own judgment in the purchase of these materials within certain dollar limitations. Our branches employ the policies that are established by our central Purchasing Department in re-

(Please turn to page 334)



## **MASTERS** and PADS

FOR BETTER PERFORMANCE - BETTER PRODUCTION

## AND

# PROFITS

## STYLE "S" MASTER COLLETS and PADS

The Only Master Collet with

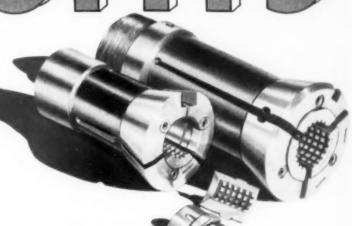
No Work Pressure On The Screw

Available For: Cleveland-Cone

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## STYLE "B" MASTER FEED FINGERS and PADS

Pads Cannol Work Loose
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HARDINGE BROTHERS, INC., ELMIRA, N. Y.

## HOOD Industrial Gloves... made to fit the job



No matter what the job, there's a Hood Industrial Glove that fits it perfectly. The style, shape, materials and treatment of every Hood Glove are determined by the requirements of a specific kind of work. That's why it's important to specify "Hood"- the glove that's "tailor-made" for the job.

Write today for free 1957 Hood Glove Guide - shows you how to choose the RIGHT glove for EACH job.

## **HOOD RUBBER CO.,**

WATERTOWN, MASS.

RUBBER . NEOPRENE . PLASTIC COATED INDUSTRIAL GLOVES

For More Information Circle No. 393 on Inquiry Card-Page 17 332



CEMENT BONDED SAND METHOD

CHAMBERSBURG ENGINEERING COMPANY

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For More Information Circle No. 394 on Inquiry Card-Page 17

BIG NEW

fancooled rotary model 4565



GAST AIR PUMPS

deliver 45 C. F. M. - double the capacity of previous models!

AS COMPRESSOR

VACUUM PUMP:

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Now ..... bigger -volume utility for original equipment or plant use! Built as either Compressor or Vacuum Pump for continuous, heavy-duty service. Air-cooled by 10" diameter pitch fan. Cowl-guard directs air—eliminates water-cooling headaches.

Long-lived, efficient 5-vane rotary design positive, pulseless air delivery — needs no tank. Easy-to-mount v-belt drive. Three rows of ball bearings. Weight only 92 lbs.! Many

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Original Equipment Manufacturers for Over 25 Years



GAST . AIR MOTORS TO 4 H.P.

ROTARY • VACUUM PUMPS TO 28 IN. See Our Catalog in Sweet's Product Design File

For More Information Circle No. 395 on Inquiry Card-Page 17

PURCHASING

# Purchasing Agents Find Michigan Abrasives Increase Pieces-Per-Belt 30% OR MORE!



## FACTS FROM TYPICAL MICHIGAN ON-THE-JOB FILE:

OPERATION: Backstand grinding-finishing die cast auto-trim parts.

FORMER BELT: Resin bond, 180 grit - 150 pieces per belt.

MICHIGAN BELT: RED COAT Resin bond, 180 grit - 250 pieces per belt.

663/3% more pieces and nothing was changed but the belt!

Yes, it may be hard to believe but, it's true! And, as a purchasing agent, you know nothing puts more value into sales dollars than a major cut in costs. That's why sound purchasing is more important today than ever before. Now, more and more people who thought they were getting peak production are being amazed at the additional production they get from Michigan Abrasive RID COAT resin belts, discs and sheets.

If you think you are buying maximum production and life with your present coated abrasives, you owe it to yourself to test Michigan RED COAT Brand products in your operation. Only then will you know that your grinding and finishing costs are at rock bottom.

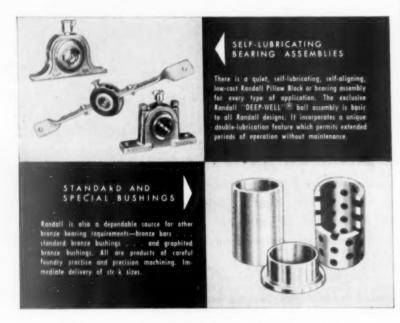
Michigan Abrasive is the fastest growing manufacturer of coated abrasives in the country ... and no wonder! The proof is in all-around outstanding *performance*. Michigan can't be matched in quality, line, delivery or price.

Michigan ABRASIVES See for yourself how RID COAT, the sharper cutting, cleaner cutting, smoother finishing brand of coated abrasives can save money for you. Send for our free, complete catalog and indicate on coupon if you want our representative to call you for an appointment. Do it soon. You'll be glad you did!

# MICHIGAN ABRASIVE CO. Manufacturers id "The Humidity-Centrelled Abrasive" 11910 E. 8-MILE ROAD • DETROIT S, MICHIGAN I want to know more about Michigan Abrasives. Please send free Catalog | Mave representative cell | Name Title Firm Address City \_\_\_\_Zone \_\_\_State \_\_\_\_\_RED COAT BRAND

# let Randall solve your sleeve bearing problems

Randall manufactures a complete line of bronze sleeve bearing assemblies, standard bronze bushings, bronze bars and graphited bronze bushings. For many applications, Randall will be able to make immediate delivery from stock. Randall will work with you in solving your application problem requiring a design modification or special type bearing or bearing assembly. For the most efficient and economical solution to your sleeve bearing problems, contact Randall with your sleeve bearing requirements.



All Randall graphited bushings feature Randall's exclusive graphite formula offering the efficiency and protection of double lubrication. Randall's porous graphite mixture can hold a reserve of oil where it is immediately available to the bearing surface and will not wash away or create oil sludge. Call your Randall distributor today, He's listed in the yellow pages of the telephone directory under "Bearings."

USE THIS CONVENIENT COUPON TO OBTAIN COMPLETE DETAILS

Randall

Clip this coupon to your letterhead, include your name and department and send it to Randall Graphite Bearings, Inc. We will send you the complete Randall Pillow Block and/or Bronze Bushing Catalogs. Please check your interest.

## RANDALL GRAPHITE BEARINGS, INC.

1014 SOUTH GREENLAWN AVENUE, LIMA, OHIO

For More Information Circle No. 397 on Inquiry Card-Page 17

## Centralized or Decentralized

(Continued from page 330)

spect to the procurement of materials for our operating departments and our attitude and interests toward suppliers. Our problems vary depending upon the various locations of our branches. Each branch buyer is permitted to develop both initiative and capacity in respect to the area and departments that he serves.

## Governmental Purchasing

(Continued from page 138)

supplies at points of use as economically as possible.

### **Need Close Coordination**

The usual reaction at this point of many who are in public purchasing is that this does not apply to their situation, that it pertains only to the Federal government because their responsibility is limited to purchasing or perhaps purchasing and stores. My answer is that to the extent that certain supply functions are not under your supervision, it then calls for very active coordination. Most important, it is a matter of developing ideas that apply to particular situations you have to work with that can be used as a means of doing a better over-all supply job.

Inventory management has been one of the most difficult supply responsibilities. We have on the one hand certain management tools which are generally accepted to determine how much to buy and when to buy. On the other hand, we must use judgment in reaching those decisions. Both are essential.

Frequently, the difficulty is that there is too much reliance upon intuitive judgment in determining stock replenishments or else there's excessive reliance upon management tools based on inadequate decisions as to how stock replenishment shall be evaluated. The problem is to relate both individual judgment

(Please turn to page 338)



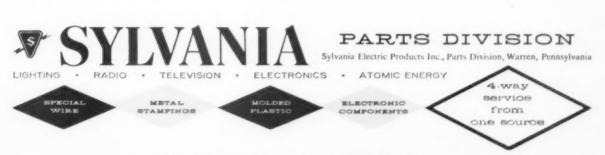
## Sylvania knows both sides of this composite wire story

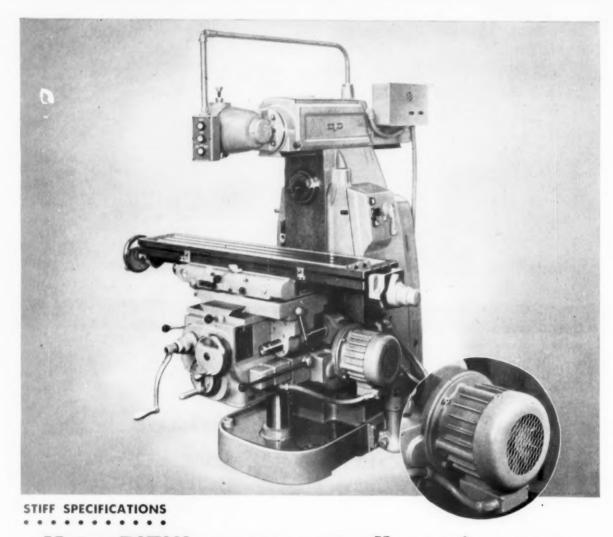
Which kind of wire will do your job better...plated? or clad? In Sylvania's case histories, one 'usually comes out on top, pricewise, performancewise . . . or both.

And perhaps Sylvania can help you decide which it is for you. As a manufacturer of both types, we'll give you our best and objective opinion of whether you could better be using a plated wire where you're now using clad . . . or clad where you're now using plated.

No matter what wire properties your application calls for, it will help you to know that Sylvania is one of the nation's top custom platers of wire. Plating ranges from flash to 20% by weight in a wide range of materials in sizes from .250" to .002". Or, your custom wire can be clad in just about any combination of cold-drawn materials.

Alloy wires too, are available on both a custom and standard basis, as well as custom wire welds, and plated metal strip. Sylvania Parts Division is your source for metal stamping, plastic molding and special components as well. Write for complete information.





## Yet a DIEHL motor met all requirements

The requirements of one of the largest milling machine manufacturers called for a close-coupled, special duty motor to raise and lower the knee and develop sufficient torque for heavy table loads in rapid traverse without stalling. Cool operation was imperative to avoid distortion of the machine table due to heat transfer. The motor was to be mounted directly on the gear case, therefore complete protection against oil leakage into the motor was essential. Motor size, compactness and appearance were important factors. DIEHL developed the special totally enclosed motor illustrated, which met all desired requirements. Cool operation was assured by the fan-cooled design of the motor, effectively preventing heat transfer. The flattype construction saved considerable space and overhang, conforming well with machine contours. Positive and dependable machine operation was the end result. This is another example of DIEHL accomplishment based on almost three-quarters of a century of experience in the design and manufacture of motors for industry. Utilize this experience in the solution of your motor problems. We'll work closely with you to provide the right motor—at the right time—at the right price.

| DIEHL MANUFACTURING C<br>Electrical Division of<br>THE SINGER MANUFACTURING C<br>Finderne Plant, SOMERVILLE, | OMPANY            | Diehl)            |
|--|-------------------|-------------------|
| Please send me Consolida No. P-7 — 3540  | ted Motor Catalo  | og and Price List |
| ☐ Please have a DIEHL re   | presentative call |                   |
| NAME   |                   |                   |
| COMPANY  |                   |                   |
| STREET   |                   |                   |
| CITY   | ZONE              | STATE             |
|  |                   |                   |

Baltimore · Chamblee, Ga. · Charlotte · Chicago · Cincinnati · Milwaukee · Needham, Mass. · New York · Philadelphia · Syracuse

For More Information Circle No. 399 on Inquiry Card—Page 17 336

For More Information Circle No. 400 on Inquiry Card—Page 17  $\rightarrow$  Purchasing

# "WHAT'S YOUR LINE?"

## CHEMICALS, PRIMARY METALS, MACHINERY?

You name it—and the odds are two to one that McGregor-Michigan is experienced in your line. We're turning out an endless miscellany of steel plate fabrications for industries across the nation. As part of the proof of our ability and versatility, here are a few of the products of the manufacturers and processors we're serving:

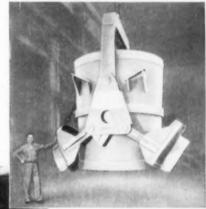
Acids, alkalis, fertilizers, glass, refractories, plastics, petroleum, steel, aluminum, automation and special machinery, explosives, paper, diesels, cement and rock products, coke by-products, leather, soap, tools and dies, textiles—and numerous variations of these.

As further evidence of the reliability of McGregor-Michigan, we're proud to point out that the frequent repeat orders from these fine customers are the surest indication that we've earned their good will. How? By seeing that all factors are in balance: price, quality, delivery and service—for it is only by complete attention to all of these that we are able to fully satisfy our many diversified customers.

If you don't see your particular industry included in the list above, think of the many problems these customers have thrown at McGregor-Michigan—then go and do thou likewise.



Special indexing machine tool base over ten feet in diameter, weight nearly ten tons.



Steel mill scrap bucket. Linkage equalizes opening of clamshell halves.



Stainless steel jacketed chemical mixing kettle.

Operates under vacuum and atmospheric pressure, medium high temperatures.



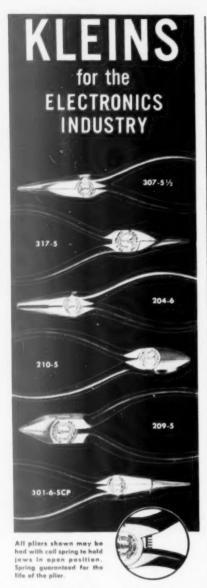
let showing equipment and typical steel plate fabrications.



## McGREGOR-MICHIGAN CORPORATION

5908 RIVARD . DETROIT 11, MICHIGAN TRINITY 2-2400

TEEL PLATE FABRICATING AND WAREHOUSING



Light in the hand . . . comfortable to use ... points carefully matched ... knives hand honed-all these features are yours with genuine Klein Pliers.

100 years of engineering skill and manufacturing experience are behind every pair of Kleins you buy.

You will be amazed at how much better a job you can do . . . how much faster you can do it . . . when the pliers you use are

Ask Your Supplier

Write for your free copy of the Klein Pocket Tool Guide

For More Information Circle No. 359 on Inquiry Card-Page 17

## Governmental Purchasing

(Continued from page 334)

and the determination as to what factors shall be used in evaluating replenishments and how they shall be obtained.

We have been devoting considerable time to the development of the economic order of quantity, also the economic purchase quantity methods of solving this problem. We have established pilot operations and the results are very gratifying. Thus far the results have shown that inventories are better balanced through the use of these systems. The total inventory is reduced but back orders are minimized because replenishments are evaluated by item determinations. Specifically. the economic order quantity system provides a sound basis for the stock analyst to determine the proper quantity for replenishment. The economic purchasing quantity plan provides the purchasing officer with the information which he may adjust to take advantage of quantity discount and transportation savings.

## Fuel Oil Outlook

(Continued from page 117)

Hemisphere to supplement our present oil transportation faciliities. These also mean more and cheaper fuel to you.

In conclusion, the immediate future as I see it, holds the following in store:

(1) Inventories of fuel oils in storage will increase considerably.

(2) Prices will decline reasonably and will stay down if imports are not curtailed.

(3) Fuel oil prices will always be competitive with other fuels although there may be a rare or a temporary dislocation of supply or transportation affecting a particular price structure in an isolated area.

For the long range future, I would also like to make the following prognostications:

(1) American living standards will continue to go up and European living conditions will continue to improve. This will mean

(Please turn to page 342)





ACTURING COMPANY



327 Pine Street Pawtucket, Rhode Island

For More Information Circle No. 401 on Inquiry Card-Page 17



## **No Two Plants**

## are alike...



# but all can count on VEEDER-ROOT

Sure, everybody's manufacturing problems are "different." But when these problems involve mechanical or electrical *Countrol*, they can *all* get the right answer from the same man . . . the Veeder-Root Distributor.



You will find that this man is tops in his field. He knows industry, and he knows how to adapt and apply standard Veeder-Root Counters to all types of production machines and processes, to give you exactly the facts-in-figures you need. If it's a question of quality, volume, cost inventory, production, wage or incentive payment, remember that you're never sure unless you count. And remember that the man you can always count on is your Veeder-Root Distributor. If you don't know who he is, just drop a line to D. G. Dresser, Veeder-Root Inc., Hartford 2, Conn.



### SMALL RESET COUNTER

A compact, rugged reset counter for moderate duty in parts inspection, quality control, conveyors, machine tools, light presses, etc. Dimensions:  $1\frac{14}{6}$ " long,  $1^{18}$ %4" high,  $1\frac{1}{16}$ 6" wide. Speed: Up to 1000 counts per minute.



### BOX-TYPE RESET COUNTER

For punch press installations, conveyors, metal-working equipment, die costing, plastic-molding, rivet, spring and wire machining, or any installation requiring a heavy duty counter.

Dimensions: 4½" long, 2½½" high, 3½%" wide.

Speed: 500 counts per minute.



RESET MAGNETIC COUNTER

For remote indication of machine operation from plant to office. Dimensions:  $3^{1}\frac{1}{16}''$  long,  $2^{1}\frac{1}{2}''$  high,  $1^{1}\frac{1}{8}''$  wide.

Speed: Up to 1000 counts per minute.

Coils: 110V-AC are standard. Other voltages are available. Panel mounting feature also available.



For quick spot-checks of production or performance.

Dimensions: 1<sup>17</sup>/<sub>64</sub>" long (to end of reset knob), 1<sup>3</sup>/<sub>4</sub>" deep, 2" high.

Counts one for each depression of the thumb lever, and resets to zero by a turn of the knob.



For checking to make sure that the machine is operating at the required R.P.M. Dimensions:  $3\frac{1}{4}$ " long,  $\frac{1}{4}$ " max. diameter. Non-

Reset.

Internal clutch operates counter only when rubber tip is pressed against the shaft.

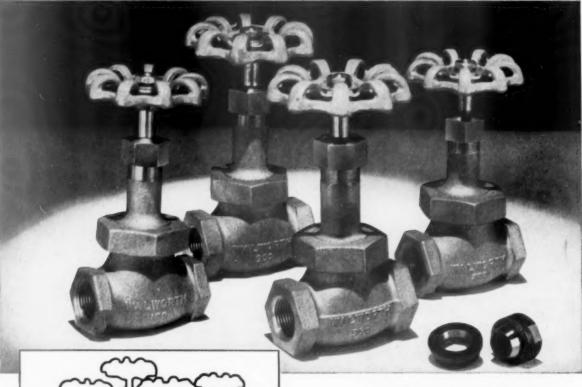
Everyone can count on

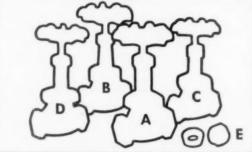
**VEEDER-ROOT** 

'The Name that Counts'



Hartford, Conn. • Greenville, S. C. Chicago • New York • Los Angeles San Francisco • Montreal Offices and Agents in Principal Cities





| E - "5  | 00 Brinell" | Stainless ! | Steel Plug | Type Sea | and Disc |
|---------|-------------|-------------|------------|----------|----------|
| D-No.   | 237P        | 1           | 50 WSP     | 500F, 30 | 00 WOG   |
| C-No.   | 245P        |             | 00 WSP     | 550F, 40 | 00 WOG   |
| B-No.   | 260P        | 3           | OO WSP     | 550F, 60 | 0 WOG    |
| A - No. | 225P        | 3           | SO WSP     | 550F, 10 | 000 WOG  |

Walworth offers four lines of Bronze Globe Valves with stainless steel, plug-type seats and discs. Advantages of these valves include:

- Stainless Steel Plug-Type Seats and Discs, heat-treated to a minimum of 500 Brinell hardness reduces wiredrawing to a minimum. Seats and Discs are machined and fitted simultaneously, assuring perfect mating.
- Deep Stuffing Boxes with Glands are fitted with reinforced, molded packing. Valves can be repacked under pressure when fully opened.

For Longer Bronze Valve Life . . .

## "500 BRINELL" PLUG-TYPE STAINLESS STEEL SEATS AND DISCS

150 lb. 200 lb. 300 lb. 350 lb.

- Oversize Stems, made of high tensile strength siliconbronze, assure long life.
- Rugged Body Hexes, are flat on top; do not interfere with wrench gripping body-to-bonnet union ring connection.
- Bodies, made of Composition M bronze (ASTM B61), have ample wall thickness to provide high safety factor.
- Potented Handwheels are air-cooled and designed with a "finger-fit grip." Makes turning easy even when wearing greasy gloves.
- Identification Plates secured by lock-washer under stem nut, show Figure Number of valves and make re-ordering sure and easy.

FOR COMPLETE INFORMATION, SEE YOUR WALWORTH DISTRIBUTOR OR WRITE FOR ILLUSTRATED CIRCULAR

## WALWORTH

60 East 42nd Street, New York 17, New York

SUBSIDIARIES: (IVI) ALLOY STEEL PRODUCTS CO. 6 CONOFLOW CORPORATION H M& H VALVE & FITTINGS CO.

So the idea is to keep the brush clean and the water cup full?

Right, son! And when you run out, the tape is right over there.

Safetex?

Safetex!



Your Shipping Department needs a gummed tape that seals the first time, every time. That's why Safetex is made under such rigid control—from parent roll of paper to carton-packing for shipment. Let Safetex prove itself in your shipping room.

SAFETEX SUPERSTANDARD GUMMED TAP



CENTRAL PAPER COMPANY . MENASHA, WISCONSIN



# YOU CAN'T BEAT N B D FOR MACHINED BRONZE BEARINGS

For heavy-duty bronze castings, you can't beat NBD quality, casting know-how and machining facilities. Weights up to 20,000 lbs . . . machined to any degree of finish . . . in sizes up to 72 inches in diameter. Precise tolerances held to your specifications.

Many leading equipment manufacturers are taking advantage of our years of specialization in bronze metallurgy...our more than 40 special bronze alloys ...our complete facilities for sand casting, 'shell mold, cast-to-size and centrifugal casting.

Want quotes or information? Just call or write.



## NATIONAL BEARING DIVISION

4930 Manchester Avenue • St. Louis 10, Missouri PLANTS IN: CHICAGO • ST. LOUIS • MEADVILLE, PA.

For More Information Circle No. 405 on Inquiry Card-Page 17

## Fuel Oil Outlook

(Continued from page 338)

a continuing increase in the demand for petroleum products both here and abroad.

(2) More sizable and extensive oil reserves will be found not only in the U. S. Gulf Coast off shore explorations now so much in the news, but also in Canada, Venezuela and the Middle East. There will not only be ample fuel oil supplies but even surpluses which will require additional storage at marketing areas if we are not to have problems of oversupply.

(3) Fuel oils will be competitive and will be in sufficient supply to support all industry and home heating requirements.

(4) Natural gas will continue to fight for its rightful place in the energy field. However, I believe, natural gas prices will increase while fuel oils will furnish cheaper BTUs.

(5) Coal will maintain its present position in heavy industry. Fuel oil will be competitive but not cheaper unless due consideration is given to oil for its advantages in combustion, cleanliness and labor savings.

## Legal Pitfalls

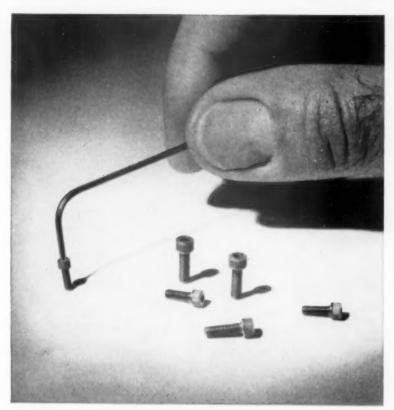
(Continued from page 102)

alike—is buyer responsibility under the Robinson-Patman Act. Every contracting officer, of course, knows that Section 2 (f) of the Robinson-Patman Act declares it unlawful for a person engaged in commerce and in the course of such commerce "knowingly to induce or receive a discriminatory price which is prohibited by this section." I would gladly omit this pitfall, because, as a corporate attorney, I have always been a little embarassed to advise a purchasing agent not to do too good a job.

I am reminded of the late Justice Oliver Wendell Holmes' critique as to the Sherman Act, It isn't fair. It won't let the strong man win the race." The overlying philosohpy of the Sherman Act, however, was to promote competition—hard, tough, difficult com-

(Please turn to page 346)

## Miniature screws aid standardization of small devices



Standard UNBRAKO miniature socket head cap screws are available in sizes #0, #1, #2 and #3, in heat treated alloy steel or stainless steel, at your authorized industrial distributor's. Standard lengths range from 1/6 to 1/6 in.

## HEAT-TREATED ALLOY STEEL

Class 3 Fit Standard

| Diameter |   | Threads per Inch<br>NC NF Length |    | Recommended Installation Torque in Inch-Pounds NC NF |      | Weight per 1000<br>in Pounds |     |      |
|----------|---|----------------------------------|----|--|------|------------------------------|-----|------|
|          | A | .104                             |    | 80   | 1/8  |                              | 2.0 | .152 |
| 440      | В | .060                             |    | 80   | 3/16 |                              | 2.0 | .182 |
| #U       | D | .060                             |    | 80   | 1/4  |                              | 2.0 | .210 |
|          | F | .050                             |    | 80   | 3/8  |                              | 2.0 | .265 |
|          | A | .118                             |    | 72   | 1/0  |                              | 3.5 | .27  |
| 41       | В | .073                             |    | 72   | 3/16 |                              | 3.5 | .32  |
| #1       | D | .073                             |    | 72   | 1/4  |                              | 3.5 | .37  |
|          | F | .050                             |    | 72   | 3/8  |                              | 3.5 | .47  |
|          | A | .140                             | 56 |  | 3/16 | 6.0                          |     | .42  |
| 11.0     | B | .086                             | 56 |  | 1/4  | 6.0                          |     | .50  |
| #Z       | D | .099                             | 56 |  | 3/8  | 6.0                          |     | .58  |
|          | F | 1/16                             | 56 |  | 1/2  | 6.0                          |     | .70  |
|          | A | .161                             | 48 |  | 3/16 | 8.5                          |     | .59  |
| #3       | В | .099                             | 48 |  | 1/4  | 8.5                          |     | .70  |
| TI       | D | .086                             | 48 |  | 3/8  | 8.5                          |     | .81  |
|          | F | 5/64                             | 48 |  | 1/2  | 8.5                          |     | 1.03 |

## Tiny close-tolerance Unbrako screws available in standard sizes

New economies in the design of spacesaving miniature equipment are possible with these UNBRAKO miniature socket head cap screws. Manufactured to timepiece precision, available locally, they save the costly necessity of designing special screws to fasten tiny parts in compact units. They're ideal for use in typewriters, calculators and computers, servomechanisms, electric and electronic equipment-and in countless other small, intricate devices where maximum reduction in bulk and weight is required with no sacrifice in strength of individual components or assemblies.

Fingers grip the knurled heads on these tiny screws positively for easy handling and fast assembly. Uniform hex sockets assure maximum wrenching torque. Controlled fillets under the heads prevent sheafing of the heads. Threads are fully formed for maximum strength and exact fit. Extremely accurate head diameters permit their use in countersunk holes, saving weight by reducing the length of the screw required and making flush designs possible.

These standard Unbrako miniature screws are available at your authorized industrial distributor's. See him today. Or write us for Bulletin 2055 and samples. Unbrako Socket Screw Division, STANDARD PRESSED STEEL Co., Jenkintown 31, Pa.

Standard Screws are threaded to the head. Special materials, lengths, and threaded lengths are available. One "High-Titan" UNBBAKO hex key is included with each package of 100 screws.



SOCKET SCREW DIVISION

STANDARD PRESSED STEEL CO.





## They look like twins... but one is synchronous



Louis Allis "SYNCRO-SPEDE"\* offers...for the first time...a synchronous motor in the same frame sizes as a standard induction motor

New from Louis Allis — the most compact and efficient synchronous induction motor on the market ... the revolutionary "Syncro-Spede." It's the only synchronous motor built in standard NEMA frames for comparable ratings in any enclosure.

The space-saving "Syncro-Spede" has no external excitation, wound rotating fields, collector rings or brushes—offers simplified control and low-cost operation. And it's virtually maintenance-free.

In performance, "Syncro-Spede" delivers and maintains exact synchronous speed within its rated capacity, regardless of load variations or voltage dips. When "Syncro-Spede" motors of several different ratings are powered by a single adjustable-frequency

source, their acceleration, running speed, and deceleration can be synchronized.

"Syncro-Spede" is the low-cost answer to such demanding synchronous applications as precise adjustable-frequency multi-motor systems...high-frequency generator drives and constant-speed conveyor drives...precision timing and metering devices...recording instrument drives...any system requiring constant speeds from no-load to full-load.

"Syncro-Spede" sizes range up to 100 hp. For information and expert application engineering assistance, contact your nearby Louis Allis District Office or write directly to The Louis Allis Company, 439 East Stewart Street, Milwaukee 1, Wisconsin.

e"Syncro-Spede" is a trademark of the Louis Allis Co.

LOUIS ALLIS

MANUFACTURER OF ELECTRIC MOTORS AND ADJUSTABLE SPEED DRIVES



.. as it needs to be?

Have you studied your floor maintenance operations and costs lately?

Are you satisfied you are getting the best results per hour of labor and dollar of expense? Remember 95c of every floor maintenance dollar is spent for labor. We suggest you call in your nearby Hillyard "Maintaineer"® for a consultation. He will carefully study your floors, floor traffic and special problems, and will recommend in each case: (1) modern streamlined work methods and short cuts: (2) upto-date labor-saving, dollar-saving tools and equipment; (3) specialized floor treatment products tailored to the particular type of floor and floor use that will cut your labor costs.

The Hillyard Maintaineer has had years of training and experience in every conceivable type of floor problem. He will gladly put this experience at your disposal, help train your staff. There's no charge, no obligation.

He's "On Your Staff, Not Your Payroll."

ST. JOSEPH, MISSOURI SAN JOSE, CALIF. PASSAIC, N. J.

## CASE HISTORY - WAXING

Tough, resilient Super Hil-Brite lasts 3

Tough, resilient Super Hil-Brite lasts 3

TIMES AS LONG as ordinary floor waxes.

TIMES AS LONG as ordinary floor waxes.

Eliminates expensive stripping and

Eliminates expensive stripping and

Feliminates expensive stripping and

Eliminates expensive stripping and

Feliminates expensive stripping and

Eliminates expensive stripping and

Feliminates expensive stripping and

## SEE IF THE MAINTAINEER CAN HELP YOU!

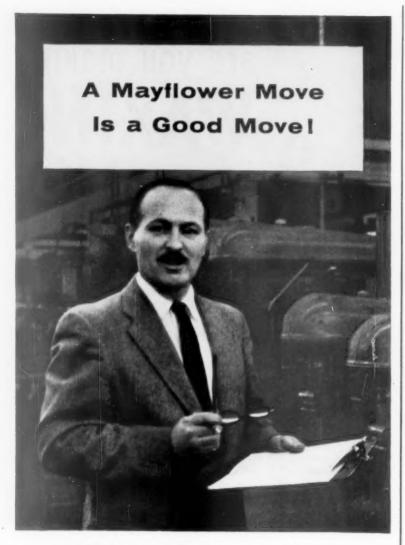
HILLYARD St. Joseph, Mo.

Yes, I'll take you up! Without charge or obligation, have the Hillyard Maintaineer. show me how to take advantage of new streamlined floor treatment procedures.

Name \_\_\_\_\_

Address -

City \_\_\_\_\_State \_\_\_\_\_ Dept. 1-3



Any man you move for your company is an *important* man in your organization. If he weren't you wouldn't be transferring him. Whether he's a production manager, engineer, salesman, or top executive, you'll find he has confidence in Mayflower. Here, for instance, is a note we received from a recent customer whom we moved from Wallace, Idaho to Richmond. California:

"All the service was excellent, I would heartily recommend Mayflower, and I shall do it if the opportunity presents."

It's a mighty good move to call Mayflower for your personnel transfers. Just phone your nearby Mayflower agent for America's Finest Long-Distance Moving Service.

AERO MAYFLOWER TRANSIT COMPANY, INC. . INDIANAPOLIS



AMERICA'S FINEST LONG-DISTANCE MOVING SERVICE

For More Information Circle No. 409 on Inquiry Card-Page 17

## Legal Pitfalls

(Continued from page 342)

petition. Many people have pointed out that the Robinson-Patman Act on the other hand seems to encourage soft, easy competition. Nowhere is this clearer than in the context of purchasing. You are asked to go into the market place with one hand tied behind your back.

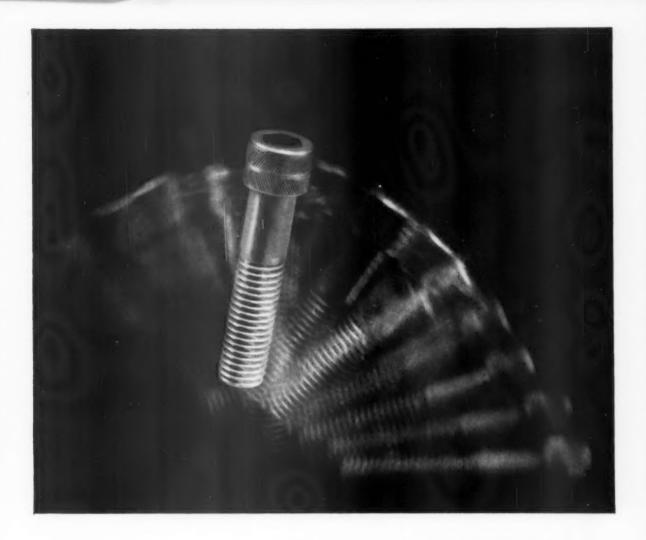
Nor can this subject be taken lightly. Not only has this issue been carried to the Supreme Court in the Automatic Canteen Case, but the Federal Trade Commission has filed over a score of complaints based upon charges that a buyer knowingly obtained a discriminatory price from a seller.

We have no choice but to follow the law and recognize that as buyers we cannot escape the thrust of the principle that if it is wrong to discriminate, we are wrong knowingly to induce discrimination.

The Supreme Court laid down the general rule that a buyer who knows that he buys in the same quantities as his competitor and is served by the seller in the same manner with the same amount of exertion as the other buyer can fairly be charged with notice that a substantial price differential cannot be justified.

There are a number of practical suggestions I would make as to buyer responsibility. First, in no field, so much as in the field of government regulation of business must you work as closely with your legal advisor. Far be it from me to scare you with legal bogeymen, but there are few practices in which you normally engage that might not have adverse legal implications. Such a simple, well-recognized practice as reciprocity may be a symptom of illegality in certain contexts of intercorporate relationships. Requirement contracts which obviously serve an essential economic purpose in many situations, have, as I previously mentioned, been condemned as illegal in others. So in the situation of buyer responsibility under the Robinson-Patman Act, a step-by-step approach

(Please turn to page 348)



# There's a good reason why CHICAGO socket screws "roll with the punch"

Strange as it seems, the hardest fastener or one with greater tensile strength can be the weakest part of your product. Why? Because excessive hardness results in a brittle fastener that is more susceptible to failure under sudden shock.

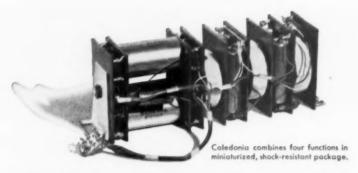
At CHICAGO, proper hardness is a mighty important phase of our metallurgical quality control. Through years of specialized experience, we've found the hardness range that produces a fastener with just the right amount of elasticity to withstand severe shock and vibration. Constant testing assures every fastener has this hardness... one of many reasons CHICAGO screws are the most dependable you can buy.

For help on all your fastener problems, call your CHICAGO distributor. He's your direct line to 85 years of fastener experience.

## THE CHICAGO SCREW COMPANY

DIVISION OF STANDARD SCREW COMPANY . ESTABLISHED 1872 270 WASHINGTON BOULEVARD, BELLWOOD, ILLINOIS





## Electronics today is partly packaging

PROBLEM: Design a small (50 cubic in.) and light (31/4 lbs.) unit that contains:

1. a positive d.c. pulse selector

2. a negative d.c. pulse selector

3. a high level 60 cps band pass filter

4. a 400 cps detector circuit

(all with tight tolerances, naturally). Design it to operate within the usual

military environmental conditions, including high vibration and shock.

SOLUTION: We assembled the components shishkabob style. Then mounted the

kabob in a metal case filled with an epoxy foam compound to hold the parts in a firm cushion.

TIME ELAPSED: From original assignment, through design to volume production-two months.

If such quick, dependable assistance in design and production can make your work more effective, we'll be glad to hear from you. We offer experience, good production facilities, and a recognized quality record.

## CALEDONIA

ELECTRONICS AND TRANSFORMER CORPORATION

Dept. P.7, Caledonia, N.Y. • In Canada: Hackbusch Electronics, Ltd., 23 Primrose Ave., Toronto 4, Ont. For More Information Circle No. 411 on Inquiry Card-Page 17

## Wire Fence—since 1883 America's First



LASTS LONGER—COSTS NO MORE

· Here's important, moneysaving news for you. By a patented process Page is producing a great new wire which provides better, longer-lasting fence protection

at a substantial long-range saving. Commercially pure aluminum is bonded to fence fabric wire and thus combines the strength of steel with the corrosion resistance of aluminum. ASTM salt spray tests show that for equal thickness of coating, the new aluminized wire outlasts galvanized wire by more than 2 to 1, yet with all the advantages of this new fence fabric it costs no more to buy and install a Page Chain Link Fence with Acco Aluminized Fabric. In terms of years of unfailing service your investment can be halved or more. And to be sure of expert, reliable workmanship your fence will be engineered and erected by a nearby, long-experienced member of Page Fence Association. For helpful Page data...

Write to PAGE FENCE ASSOCIATION, Dept. PG, Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Houston, Los Angeles, New York, Philadelphia or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

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## Legal Pitfalls

(Continued from page 346)

with an understanding legal counsellor is the only solution that promises long-range success. There are few easy generalizations.

Second, we must bear in mind that the Supreme Court in the Automatic Canteen case did point out that a buyer is not liable under Section 2(f) if the lower prices he induces are either within one of the seller's defenses, such as cost justification, or not known by the buyer not to be within one of these defenses. The Court pointed out that the seller's statement as to legality or illegality is not conclusive. It stated that the Commission may consider "that the seller stating a price would be unlawful, might in some situations be puffing rather than stating anything which a buyer can rely on or should be charged with." On the other hand, the Court did not prescribe any easy method by which a buyer could maintain his innocence; on the contrary, it pointed out that the Commission may in some circumstances even refuse to accept a buyer's claim that he relied on an affidavit or the assurance from the seller that the price difference was justified.

Difficult as these procedures of proof would seem to be, the buyer is not responsible where in good faith he has no reason to believe that the price difference is greater than probable cost saving, or where he knows the seller is meeting the legal price of a competitor. As a matter of fact, simply obtaining a lower price is in and of itself seldom the gist of any serious anti-trust charge. Guilt occurs, for example, where a company dominating an industry combines buyer inducement with clear anti-competitive prac-

Third, you can generally buy at a lower price where you are giving a quid pro quo for the lower price. If you have a sound reason to ask a lower price because you are buying different quantities or in different packaging, or where you are served in a differ-

(Please turn to page 352)

### HE'S READING A PAPER 18 STORIES UP

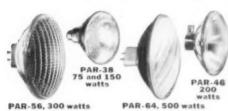
... by the light of one single 500-watt General Electric PAR Lamp! Never before could you get so much concentrated light in a self-contained lamp to do so many jobs. G-E 500-watt PAR Lamps in spot, medium flood or wide flood are the newest in a full line of General Electric lamps that give you just the right lamp for any spot or floodlighting job.

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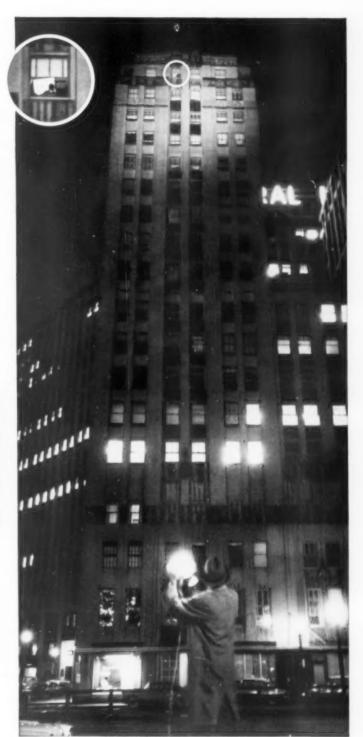
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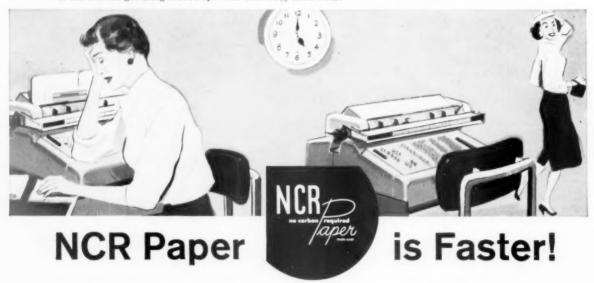


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THE NATIONAL CASH REGISTER COMPANY, Dayton 9, Ohio

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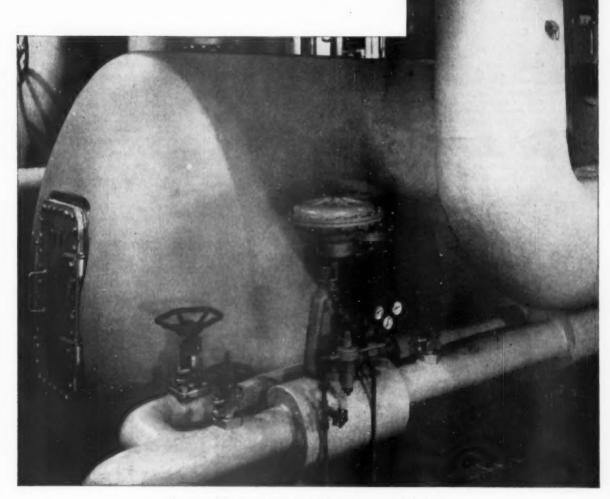
When maximum heat-insulating efficiency and economy are called for, not just for a few years but for the life of the equipment, engineers choose K&M "Featherweight" 85% Magnesia. The deaerating heater and piping illustrated here, for example, are insulated for life by "Featherweight."

"Featherweight" 85% Magnesia is the type of heat insulation best suited to the important up-to-600°F temperature range. And in combination with K&M Hy-Temp, it serves with equal efficiency up to 1900°F.

The experienced insulation contractor in your area who can offer you K&M insulations is also well equipped to advise you on heat conservation and dollar savings. Call him or write us for complete information.

KEASBEY & MATTISON COMPANY . AMBLER, PA.

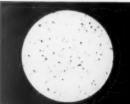




For More Information Circle No. 415 on Inquiry Card-Page 17

# photomicrographs reveal uniformity of lead distribution in MUELLER BRASS CO.

S-C (SUPER- CUTTING) ROD

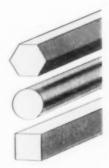




Photomicragraph of our free cutting S-C brass rod showing good lead distribution. Magnification: 75 times. Sample selected at random from production run.

Photomicrograph of ordinary free cutting brass rod showing poor lead distribution. Magnification: 75 times.

The outstanding uniformity of lead distribution in new Mueller Brass Co. S-C rod is just one of the reasons for its perfect machinability and good chip breakage. Throughout its manufacture, there are many contributing factors to this unvarying high quality . . . S-C rod, for example, is made by a new, semi-continuous casting process which makes possible, in billet and rod, a product with inherently consistent uniformity, as the photomicrograph discloses. By systematically stamping and recording each billet at time of manufacture, and by constant laboratory surveillance of melt analysis, S-C rod's high uniform quality never varies, from one order to another.



Write today for your copy of engineering manual no. FM-3010 "Copper Base Alloys in Rod Form." This fact-filled book contains full information on alloys, characteristics and properties, machining information and other data.





## MUELLER BRASS CO.

PORT HURON 30, MICHIGAN
For More Information Circle No. 418 on Inquiry Card—Page 17

## Legal Pitfalls

(Continued from page 348)

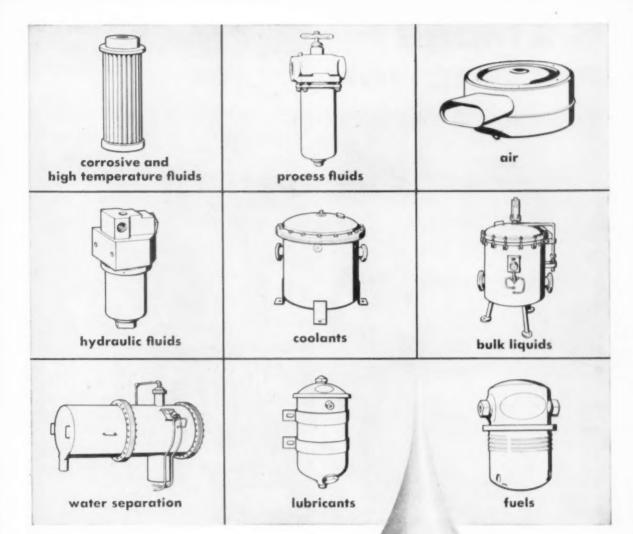
ent manner, as for example, where no sales expense is involved such as salesman's salary, or where you have different rights with respect to sales returns and allowances, then in most cases you have a right to expect a different price.

A fact often overlooked is that both purchasing and the broader phases of contracting are merely phases of the intriguing problems of communication. We are all learning more about good communication, which is in effect saying what we mean. For example, we know that we convey our thoughts much better to others when we use language which the recipient understands. Why should any different principle apply to contracting or purchasing?

In many situations, the best kind of communication to use in talking with your supplier is the vernacular. Actually some of the best contracts—if by "best contracts" we mean contracts least likely to result in litigation—are those stated in the vernacular—because both parties understand the language that was used.

Needless to say, we must always anticipate that contracts may end in the courts and for this reason precision is required, and in many cases legal language. But why any more in purchasing than in other phases of communications should we take the negative approach and assume that we will inevitably be misunderstood, or that our supplier will act in bad faith?

I am a firm believer in occasional vernacular statements in all our contracts, and in drafting contracts I always try to set down some of the key words the principals instinctively use among themselves. Those words will often be the guideposts in administering the contract. If over the years two parties have always described a product as "grey iron #41" or "blue gill fuzzy," it may mean nothing to a lawyer, but there will be much less chance of a misunderstanding than if you wrote specifications with all the legal detail and verbosity of a patent claim.



There are over 2,000 filter types available right now from Purolator. Before you consider special, custom made filters, let Purolator know your filtration problem. Write Purolator Products, Inc., 970 New Brunswick Ave., Rahway, N. J., Dept. PA2-415.

## There's a Purolator filter for every known fluid

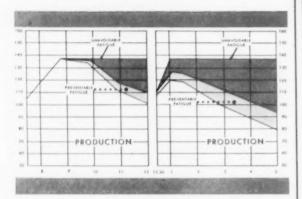
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Your workers are more alert, more productive when comfortably seated. Tests prove it! Royal industrial seating reduces fatigue, gives you higher production all day, (see charts above).

For 40 years, in hundreds of plants, Royal seating has helped to boost output, cut rejects, trim costs.

### POSTURE IS PERSONAL

Royal industrial chairs let the worker sit the way he wants. Backs adjust 4 ways for individual comfort fit. Royal chairs adjust quickly, lock firmly. For any job, under any working conditions, there's a Royal chair that's just right.

Royal pioneered comfort in industrial seating and, today, you may select from 29 modern types and models. All are described in Catalog 7001 which we'd like you to have - just write-

Scroll seat, shaped back rest adjustable 4 ways, convenient foot rail and 8" height adjustment in this sturdy Royal 515-S make it



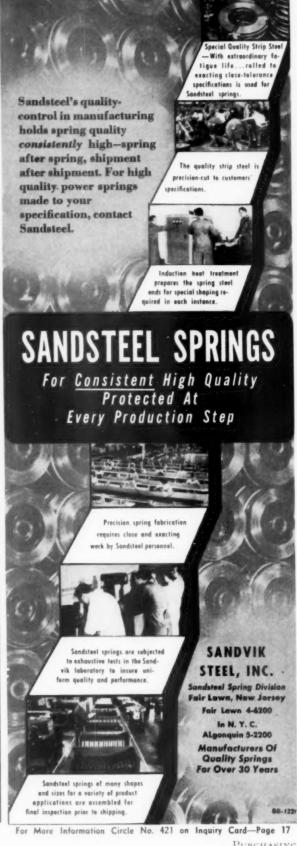


ROYAL METAL MANUFACTURING COMPANY

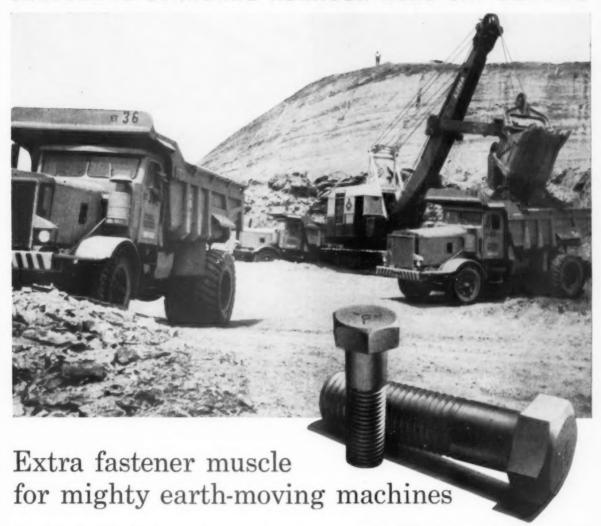
175 N. Michigan Ave. Chicago 1, Illinois



TIRED WORKERS COST MORE ... THAN ROYAL CHAIRS For More Information Circle No. 420 on Inquiry Card-Page 17



## CLEVELAND STANDARD HEXAGON HEAD CAP SCREWS



Power shovels, trucks, bulldozers—all take brutal shock loads and vibration, day in, day out. To reduce repairs and down-time to a minimum, leading manufacturers of earth-moving equipment specify Cleveland cap screws with confidence. These upset forged hexagon head cap screws put extra strength into every assembly, insure customer satisfaction.

Cleveland standard hexagon heads are manufactured from various steels and in various tensile strengths. Included are extra-large diameters and long lengths. Bright and quenched and tempered steels in all standard sizes are ready for immediate delivery—alloy steels on short notice. Let our experienced engineers help you with your fastener problems. Remember, Cleveland has the most modern of production facilities and the world's largest stock of hexagon head cap screws.

### TENSILE STRENGTHS OF CLEVELAND HEXAGON HEAD CAP SCREWS

| Product                              | Size, in.  | Tensile<br>Strength, psi<br>85,000-105,000<br>75,000-100,000<br>65,000 min |  |
|--------------------------------------|--|--|--|
| Bright                               | Up to 1/4 inct 1/5 to 1/6 inct. Over 11/6 to 11/5 incf.  |  |  |
| Quenched & Tempered<br>(SAE Grade 5) | Up to ¼ incl.<br>Over ¼ to 1 incl.<br>Over 1 to 1½ incl. | 170,000 min<br>115,000 min<br>105,000 min                                  |  |
| Quenched & Tempered<br>(SAE Grade 6) | Up to 1/4 incl.<br>Over 1/4 to 1/4 incl.                 | 140,000 min<br>133,000 min   |  |
| Alloy(SAE Grade 7)                   | Up to 155 incl.  | 130,000 min.   |  |
| Alloy (SAE Grade 8)                  | Up to 1% incl.   | 150,000 min.   |  |
| Bright                               | Over 1½ to 2½ incl.                                      | 55,000 min.  |  |
| Quenched & Tempered                  | Over 1½ to 2½ Inct.                                      | 90,000 min.  |  |
| Alloy                                | Over 11/2 to 21/2 nc1                                    | 125,000 min.   |  |

Note: Higher physicals, through use of selected alloys, can be supplied on special order.

GET YOUR COPY NOW — Pocket-size card giving you physical properties of Cleveland hexagon and socket head cap screws and Cleveland Place bolts.





THE CLEVELAND CAP SCREW COMPANY

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Quality and price are the two things she shops for most. Combine the two in one product and

you've got a sale.

This is the reason for Peerless' large volume of formed wire products in the home appliance field. The leading manufacturers know Peerless as a source of quality and price in wire goods.

We would like to serve you. Your drawings by mail will be returned with our quotation and recommendations. Or a call will bring a factory expert to your plant. We'll be pleased to hear from you.

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For transmitting power or control between two points, S.S. WHITE FLEXIBLE SHAFTS do an efficient, economical job. With these versatile shafts, you can easily provide low-cost drive or control for parts that must be mounted in hard-to-

Here's an example. Without redesigning his equipment, one manufacturer used 4 standard S.S. WHITE FLEXIBLE SHAFTS to replace a 35-part control system. The result was a 90% savings in production costs - and greatly improved

Perhaps your own product costs – number of parts, as-sembly time—can be reduced by using S.S. WHITE FLEXIBLE SHAFTS. Every day they are finding new applications throughout industry. And over the years, they have earned a reputation for quality, performance, dependability and economy. The advice of our erigineers in selecting and applying an S.S. WHITE FLEXIBLE SHAFT to your product costs you nothing. Write today for further information.

FOR YOUR PURCHASING SOURCES FILE: Bulletin 5601 contains data and money-saving applications of S.S. White Flexible Shafts. Write today for your copy!



S. S. White Industrial Division, Dept. P. 10 East 40th St., New York 6, N. Y

Western Office: 1839 West Pico Blvd., Los Angeles 6, Calif. For More Information Circle No. 424 on Inquiry Card-Page 17

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## DAZOR FLOATING LAMPS

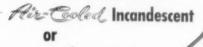
## Fit the Lighting to Each User and Each Job





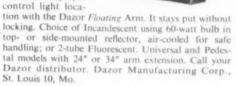
Top-Mounted Reflector

Side-Mounted



**Fluorescent** 

People . . . jobs . . . lighting needs differ. Let each employee







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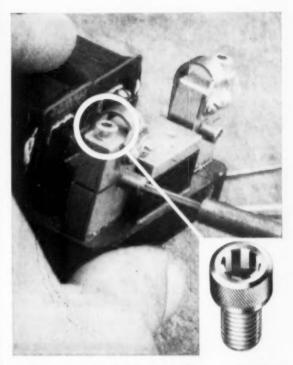
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# They called off test after 20,000,000 operations...

The Bristol Multiple-Spline socket screw still held fast though customer engineers had expected only 2,000,000 operations!

The screw locked and held critical contact adjustment to 0.001" in an ultra-reliable polar telegraph relay. Test was run by the manufacturer, Automatic Electric Company, Chicago, makers of telephone and communication equipment and electrical control devices for industry.

During the 20,000,000-cycle life test, the 0.006" contact space did not exceed the 0.001" allowable tolerance. This was made possible by the Bristol cap screw which locked the adjustment screw in place. This relay—using 4 Bristol socket screws in all—not only has to hold adjustment under operating shocks, but has to operate reliably under extremes of temperature and humidity in outlying railroad telegraph stations. The Bristol screws assure casy adjustment or disassembly when needed.

Reports like this are typical of the outstanding performance Bristol socket screws are giving hundreds of manufacturers of fine products—ranging from electric razors to guided missiles.

Bristol offers the most complete line of socket screws on the market. Hex socket screws—the industry standard—as well as Multiple-Spline. Cap, set, and with every style of point. Sold through leading industrial distributors. Ask for complete data on them today.

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For More Information Circle No. 426 on Inquiry Card-Page 17

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For More Information Circle No. 427 on Inquiry Card-Page 17

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Steel strapping equipment Have in stock approximately 100,000 A. J. GERRARD & CO. #202 Steelbinder 15" seals. Will sacrifice. Great Northern Overseas Corporation 225 Broadway, New York 7, N.Y.

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with heavy experience in decorative metal trim decorative plastic parts tools and dies

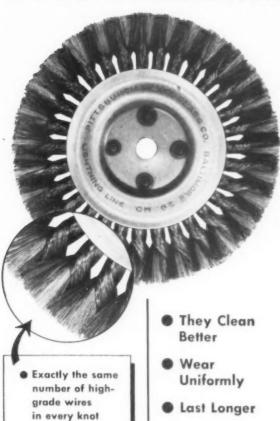
Nationally known corporation in consumer products field needs men for responsible buying positions in decorative metal trim, decorative plastic parts, tools and

Company is expanding rapidly, offering excellent opportunities for growth, Salary open . . commensurate with experience and ability.

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## Pittsburgh's **Knotted Brushing Wheels** are better balanced!



Pittsburgh Knot Type brushing wheels are perfect for cleaning welds, removing scale or rubber, and cleaning parts where penetration brushing is required. They wear uniformly and cause less vibration because they're better balanced. The special wire used is the fastest cutting, with the longest life, that can be made.

• We have been engineering, designing and building brushes for a wide variety of industries for many years. Our long experience can save you time and money. Write Pittsburgh Plate Glass Company, Brush Division, Dept. P-77, 3221 Frederick Avenue, Baltimore 29, Maryland.

PITTSBURGH Tower Driven



PITTSBURGH PLATE GLASS COMPANY

For More Information Circle No. 428 on Inquiry Card-Page 17 JULY, 1957



# [O] FORGINGS

simplify product designing... send parts cost down!



fibrous structure and controlled grain flow of Ritco Forgings provide maximum strength and toughness at points of greatest shock and stress . . . improve impact resistance and fatigue strength in parts.

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Forge ahead with Ritco . . . send blueprints for estimates now!

We also offer complete machining facilities and make Special Fasteners and Upsets. Send us your requirements!

**Exclusive New England representative** for Cleveland Cap Screw Company.

#### RHODE ISLAND TOOL CO.

PROVIDENCE 1, R. L. 150 WEST RIVER STREET

For More Information Circle No. 429 on Inquiry Card-Page 17

# letters

#### SOURCES FOR SPECIFICATIONS

The writer, adviser to the Central Purchasing Authority of the Republic of Viet-Nam, receives your publication, PURCHASING.

It would be appreciated if you could advise us sources of sets of specifications which might be useful in a procurement operation. We have, of course, the U. S. Federal Specifications but are under the impression there are other specifications issued by various specialized societies which might prove valuable.

Our range of procurement covers virtually every kind of item from industrial machinery to raw materials.

T. H. Greenfield U.S.O.M. (P&R) Saigon, Viet-Nam

 Perhaps the best step you can take in getting sets of industrial specifications is to obtain the National Directory of Commodity Specifications (Miscellaneous Publication No. 178). Published by the U. S. Department of Commerce, it contains classified and alphabetical lists and brief descriptions of specifications of national recognition. This, of course, would include those published by such groups as the American Standards Association, the American Society for Testing Materials, the American Society of Mechanical Engineers, etc.

#### HOW TO BUILD A PRICE INDEX

We would appreciate receiving any information you can supply that could aid the writer in establishing a cost index to chart price trends.

We are interested in establishing an index that would show price changes on various types of purchased materials similar to the government cost index.

Your cooperation in this matter will be appreciated.

D. J. Coleman Purchasing Agent Economic Machinery Company Worcester, Massachusetts  Enclosed are photostats of an article which appeared in Purchasing Magazine. Since the photostats are from our permanent editorial file, we would appreciate your returning them when you have finished your study.

#### PURCHASING FOR SMALL CITIES

I have been authorized to lay the ground work in formulating a purchasing department within our organization. Such a department is now non-existent, and we will be starting from scratch.

Any aids and information you might be able to furnish would be utilized and appreciated.

Kenneth E. Botts Deputy Treasurer City of El Monte El Monte, California

 We are happy to give you what help we can in setting up a purchasing department for the City of El Monte.

Our first suggestion is that you obtain a very helpful booklet, entitled, "Purchasing for Small Cities" issued by the Public Administration Service, Chicago, at one dollar per

Then you might write to Albert H. Hall, executive director, National Institute of Governmental Purchasing, Washington, D. C. for information and data on membership in that organization. It is an excellent group, and membership would pay off handsomely for you.

#### VALUE ANALYSIS ISSUE

Thanks so much for the May issue of Perchasing on Value Analysis. It's a grand job and should serve as a bible for wise purchasing agents and their bosses and associates.

Harry L. Erlicher Schenectady, New York Mr. Erlicher is retired vice president of purchases of General Electric Company.

We have received the May, 1957 issue of Purchasing Magazine and have read with great enthusiasm your articles on value analysis. We have just set up a department for our own value analysis and, therefore, your articles were extremely timely for us.

R. I. Bremer

R. 1. Bremer Director of Purchases Dura Division Detroit Harvester Company Toledo, Ohio

The May issue of PURCHASING just arrived at my desk but I had time enough to give it a quick browsing. You are to be complimented on the thorough and convincing manner in which you handled the subject of value analysis. In fact, I am so enthused that I plan to procure extra copies so that our buyers and others in our organization, including our superintendent at the Richmond Refinery, can have this available for thorough study.

With this in mind, will you please consider this an order for six copies to be sent to me.

Congratulations on what I think is one of the most outstanding issues of Purchasing I have read in many years.

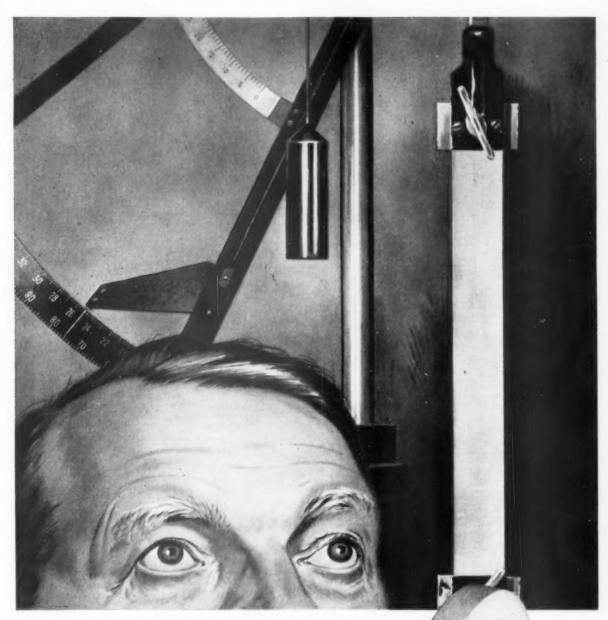
C. T. Hofmeister, Manager

C. T. Hotmeister, Manager Purchase & Stores Department Standard Oil Company of Cal. San Francisco, California

We are taking this opportunity of congratulating Purchasing for the wonderful job done by its staff in the preparation and editing of the special May issue on Value Analysis.

The many articles on this subject offer buying people a great deal of practical information which can be put to work in their everyday activities, and will no doubt contribute to the continuing growth of the purchasing field for which Purchasing Magazine has done so much.

Staff Assistant
Curtiss-Wright Corporation
Wright Aeronautical Division
Wood-Ridge, New Jersey



## Assuring built-in stretch...through quality

Masking tape with the strength and flexibility to stretch around sharp curves without breaking—yet thin enough to assure clean lines and to prevent paint build-up. That's what Behr-Manning's balanced backing does—another example of high quality at work in Behr-Cat tapes.

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Easy does it at

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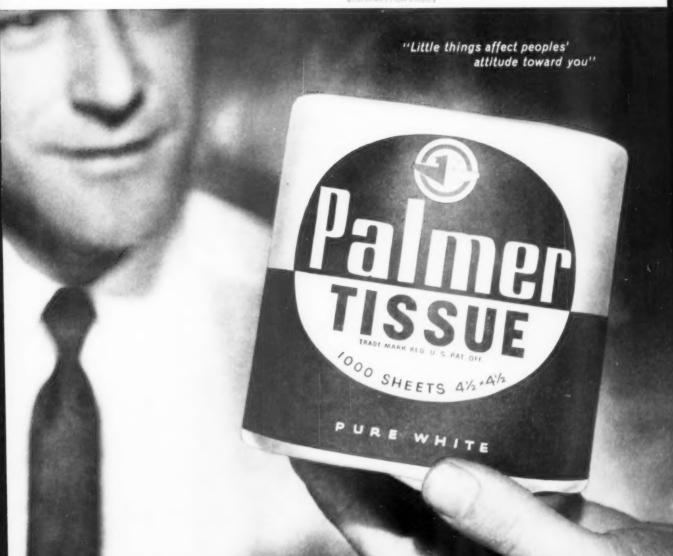
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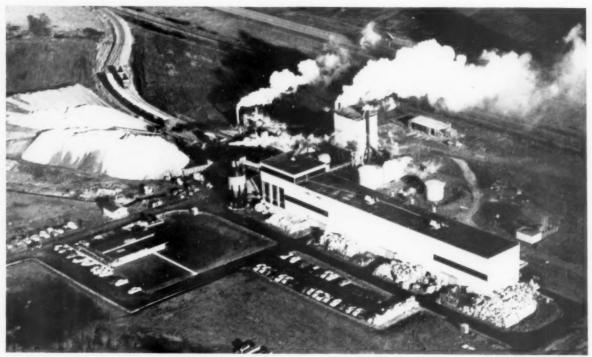
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as in the selection of a plant site,
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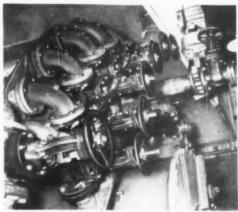
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